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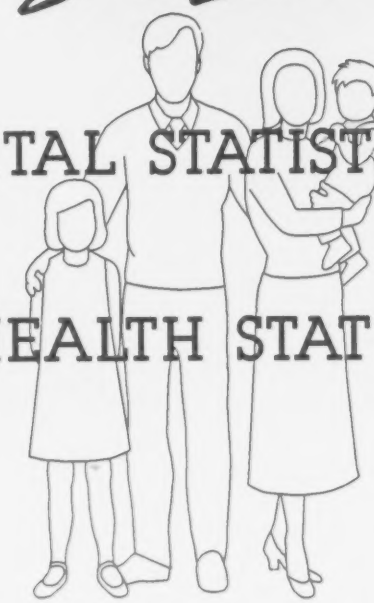
South Dakota



VITAL STATISTICS AND HEALTH STATUS: 1990

South Dakota Department of Health
Center for Health Policy and Statistics

SOUTH DAKOTA VITAL STATISTICS AND HEALTH STATUS: 1990

Barbara A. Smith, Secretary
Department of Health

Pierre, South Dakota
October 1991

PREFACE

Vital Statistics and Health Status: 1990 was prepared by the Center for Health Policy and Statistics, South Dakota Department of Health.

This report is divided into six main sections: Births, Infant Mortality, Mortality, Induced Abortions, Marriages and Divorces and Communicable Diseases. Each section contains written analysis plus tables and figures. There is also a technical notes section which provides additional information regarding the source of data, data delimitations, geographic allocation, and definitions. The birth and death information with Unknown race was prorated among the known races, due to the relative small number of incidents.

Any questions concerning the data, or request for additional statistics, may be directed to the following agency within the South Dakota Department of Health:

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Pierre, South Dakota 57501-3182
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Live Births

South Dakota Live Births An Overview: 1990	
Total Resident Live Births	10,987
Crude Birth Rate per 1,000 Population	15.8
Median Live Birth Weight (Grams)	3,459
Low Weight Births (Less than 2,500 grams)	560
Low Birth Weight Rate per 1,000 Live Births	51.0
Mean Age of Mother	26
No Prenatal Care (Percentage of Total Single Live Births)	1.1

South Dakota Resident Births

South Dakota resident births numbered 10,987 in 1990, for a crude birth rate of 15.8 per 1,000 South Dakota resident population. Resident births decreased by 0.8 percent from 1989 when there were 11,072 births.

In 1990, 50.9 percent of the babies born were male, and 49.1 percent were female. Racially the percentages were: White - 50.9 percent male, 49.1 percent female; Native American - 50.5 percent male, 49.5 percent female; and Other races - 55.2 percent male , 44.8 percent female.

The low birth weight rate per 1,000 live births decreased to 51.0 in 1990 from 53.6 during 1989. This was a 4.9 percent decrease over the 1989 low birth weight rate.

Physicians attended 95.5 percent of the births in South Dakota in 1990. While midwives (Certified nurse and other) attended 4.1 percent of the births. Last year in South Dakota, 95.2 percent and 4.3 percent of the births were attended by physicians and midwives respectively.

Table 1

Resident Live Births and Crude Birth Rates
South Dakota and United States
1960-1990

Year	U.S. Births		S.D. Births	
	Number	Crude Rate	Number	Crude Rate
*1990	4,179,000	16.7	10,987	15.8
*1989	4,021,000	16.2	11,072	15.5
1988	3,909,510	15.9	11,182	15.7
1987	3,809,394	15.7	11,482	16.2
1986	3,756,547	15.6	11,623	16.4
1985	3,760,561	15.7	12,129	17.2
1984	3,669,141	15.7	12,431	17.8
1983	3,638,933	15.6	12,521	18.0
1982	3,680,537	15.9	12,839	18.6
1981	3,629,238	15.8	12,725	18.4
1980	3,612,258	15.9	13,256	19.2
1979	3,494,398	15.5	12,973	18.8
1978	3,494,398	15.0	12,203	17.6
1977	3,333,279	15.1	12,069	17.6
1976	3,326,632	14.5	11,655	17.0
1975	3,144,198	14.6	11,294	16.6
1974	3,159,958	14.8	11,174	16.4
1973	3,136,965	14.8	10,706	15.7
1972	3,258,411	15.2	10,855	16.0
1971	3,555,972	17.1	11,634	17.3
1970	3,731,386	18.2	11,717	17.6
1969	3,600,206	17.8	11,441	17.1
1968	3,501,564	17.5	11,708	17.1
1967	3,520,959	17.8	11,424	17.0
1966	3,606,274	18.4	12,534	18.4
1965	3,760,358	19.4	13,692	19.8
1964	4,027,490	21.0	15,627	22.3
1963	4,098,020	21.7	16,711	23.6
1962	4,126,362	22.4	17,158	24.3
1961	4,268,326	23.2	17,551	25.3
1960	4,257,850	23.7	17,594	25.8

*U.S. data are provisional

Source: National Center for Health Statistics, Hyattsville, Maryland 20782 and Center for Health Policy and Statistics, South Dakota Department of Health.

Figure 1

Resident Live Birth Rates
South Dakota and United States
1960 - 1990

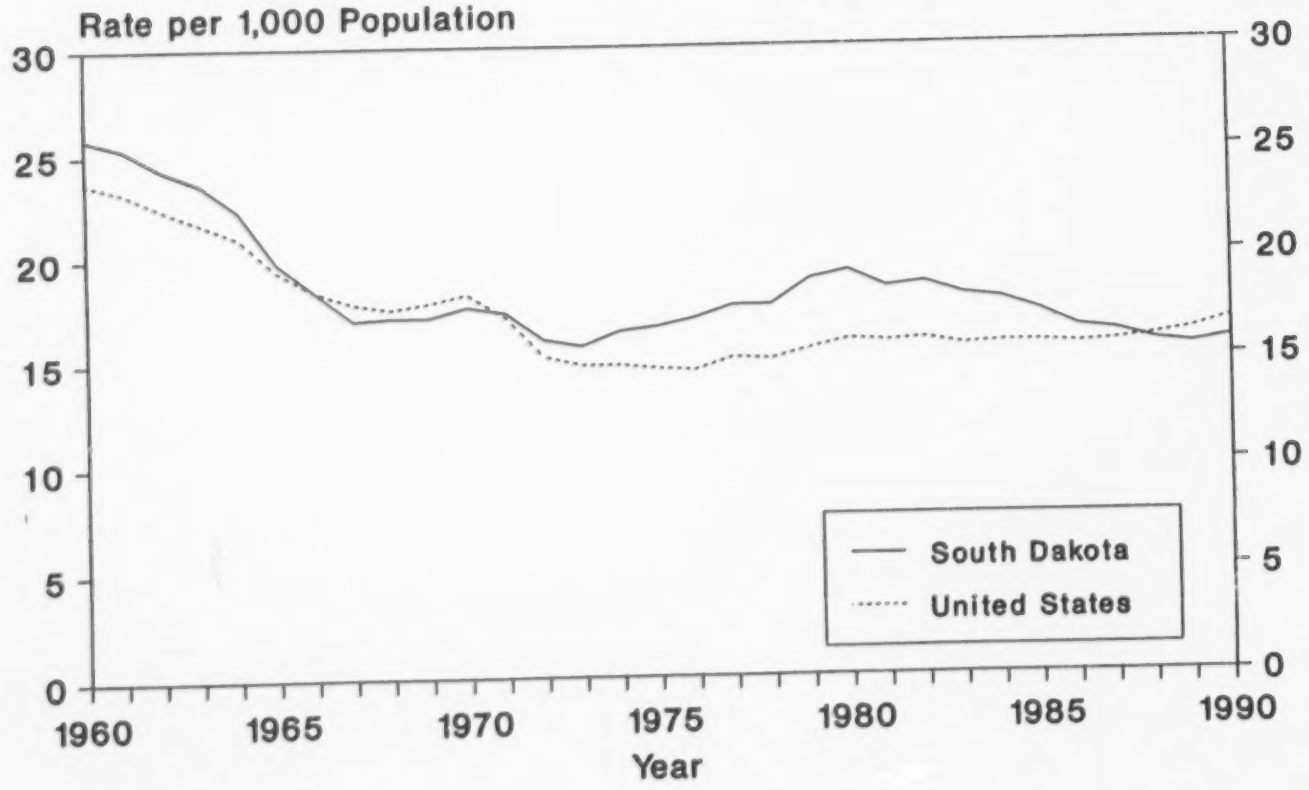


Table 2

Births Occurring in South Dakota by Mother's State of Residence and South Dakota Resident Births by State of Occurrence, 1990

	Births in South Dakota by Mothers' Resident State				South Dakota Resident Births by State of Occurrence			
	Total	White	Native American	Other	Total	White	Native American	Other
Total	11,065	9,279	1,634	152	10,987	9,165	1,668	154
Arizona	.	.	.	.	3	3	.	.
Arkansas	.	.	.	.	1	.	1	.
California	2	2	.	.	1	.	1	.
Colorado	1	1	.	.	18	16	.	2
Hawaii	1	1	.	.	.	.	.	.
Illinois	1	1	.	.	.	.	.	.
Iowa	135	133	2	.	106	103	1	2
Louisiana	1	1	.	.	.	.	.	.
Minnesota	123	113	8	2	119	117	2	.
Missouri	.	.	.	.	2	2	.	.
Montana	9	9	.	.	1	.	1	.
Nebraska	199	160	39	.	97	62	35	.
Nevada	1	1	.	.	.	.	.	.
New York	.	.	.	.	1	1	.	.
North Dakota	44	41	3	.	151	104	46	1
Ohio	1	1	.	.	.	.	.	.
Oregon	3	2	1	.	.	.	.	.
South Dakota	10,475	8,746	1,580	149	10,475	8,746	1,580	149
Texas	3	3	.	.	3	3	.	.
Utah	.	.	.	.	1	.	1	.
Virginia	.	.	.	.	1	1	.	.
Washington	3	3	.	.	1	1	.	.
Wisconsin	1	.	1	.	1	1	.	.
Wyoming	61	60	.	1	5	5	.	.
Canada	1	1	.	.	.	.	.	.

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Resident Births and South Dakota Occurrence Births

Of the 10,987 South Dakota resident births in 1990, 512 occurred out of state, and of the 11,065 births occurring in South Dakota in 1990, 590 were not South Dakota residents.

Table 3

South Dakota Resident Live Births by Mother's Race
1980-1990

Year	Births	White		Native American		Other	
	Number	Number	% of all Births	Number	% of all Births	Number	% of all Births
1990	10,987	9,165	83.4	1,668	15.2	154	1.4
1989	11,072	9,163	82.8	1,753	15.8	156	1.4
1988	11,185	9,343	83.5	1,696	15.2	146	1.3
1987	11,482	9,642	84.0	1,695	14.7	145	1.3
1986	11,623	9,807	84.4	1,678	14.4	138	1.2
1985	12,129	10,301	84.9	1,689	13.9	139	1.2
1984	12,431	10,670	85.8	1,637	13.2	124	1.0
1983	12,521	10,711	85.5	1,690	13.5	120	1.0
1982	12,839	11,095	86.4	1,624	12.7	120	0.9
1981	12,725	11,055	86.9	1,538	12.1	132	1.0
1980	13,256	11,535	87.0	1,593	12.0	128	1.0

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Births by Race

The trend in racial composition of South Dakota resident live births reversed itself 1990. The total number of births are still declining, but the percentage of white births increased from 82.8 percent in 1989 to 83.4 in 1990. At the same time, Native American births decreased from 15.8 in 1989 to 15.2 percent in 1990. The number of white births remained about the same in 1990, while the number of Native Americans dropped from 1,753 in 1989 to 1,668 in 1990, a 4.8 percent decrease. The total number of births declined only slightly from 1989, but it has declined by 17.1 percent since 1980.

Table 4

South Dakota Resident Live Births by Birth Weight
and Mother's Race, 1990

Weight (In Grams)	Total		Race					
			White		Native American		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0-499	12	0.1	10	0.1	2	0.1	0	0.0
500-999	30	0.3	23	0.3	7	0.4	0	0.0
1,000-1,499	56	0.5	48	0.5	8	0.5	0	0.0
1,500-1,999	119	1.1	98	1.1	19	1.1	2	1.3
2,000-2,499	343	3.1	288	3.1	50	3.0	5	3.2
2,500-2,999	1,383	12.6	1,146	12.5	207	12.4	30	19.5
3,000-3,499	3,971	36.1	3,344	36.5	565	33.9	62	40.3
3,500-3,999	3,659	33.3	3,044	33.2	575	34.5	40	26.0
4,000-4,499	1,191	10.8	997	10.9	183	11.0	11	7.1
4,500-4,999	203	1.9	156	1.7	44	2.6	3	1.9
5,000 & Over	20	0.2	11	0.1	8	0.5	1	0.7
Total	10,987	100.0	9,165	100.0	1,668	100.0	154	100.0
Median	3,459		3,459		3,487		3,289	
Mean	3,424		3,420		3,453		3,339	
Mode	3,515		3,515		3,345		3,289	

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Birth Weight

Distribution of birth weight by race shows little variation between the white and the Native American race. Just over 5 percent of the white and the Native American births were low birth weight.

The largest percentage of births was in the 3,000 - 3,499 gram category as was the case last year. The second largest group was the 3,500 - 3,999 gram group which was also the same last year. This year there were were 560 low birth weight births (less than 2,500 grams) or 5.1 percent of all live births. This was down from 1989 when the percent of low birth weight babies was 5.4 percent of total live births.

Table 5

South Dakota Resident Live Births by Age and Mother's Race
1990

Age of Mother	Race							
	Total		White		Native American		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than 15	11	0.1	3	0.1	7	0.4	1	0.7
15-19 Years	1,176	10.7	781	8.5	382	22.9	13	8.4
20-24 Years	2,932	26.7	2,318	25.3	563	33.8	51	33.1
25-29 Years	3,771	34.3	3,336	36.4	383	23.0	52	33.8
30-34 Years	2,321	21.1	2,065	22.5	226	13.5	30	19.5
35-39 Years	689	6.3	589	6.4	95	5.7	5	3.2
40-44 Years	87	0.8	73	0.8	12	0.7	2	1.3
Total	10,987	100.0	9,165	100.0	1,668	100.0	154	100.0
Median Age	26		27		23		26	
Mean Age	26		27		24		26	
Mode Age	27		27		19		26	

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Mother's Age and Race

Women in the 25-29 years of age cohort accounted for over one third of the South Dakota resident births in 1990, 34.3 percent. Women less than 25 years of age comprised 37.5 percent of the total live resident births. This does not hold true when the resident births were viewed racially. The median age of mother for the three races, white, Native American and Other were 27, 23, and 26 years of age respectively. The modal age of mother for the three races, white, Native American and Other were 27, 19, and 26 years of age respectively. This table shows that young mothers constitute a larger percentage of the Native American mothers than they do for white or other races in South Dakota.

Table 6

South Dakota Resident Single Live Births by Mother's Age and Race and Trimester Prenatal Care Began, 1990

Trimester Prenatal Care Began	Race							
	All Races		White		Native American		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
First	8,399	78.1	7,384	82.5	913	55.7	102	67.1
Second	1,771	16.5	1,285	14.3	444	27.1	42	27.6
Third	415	3.9	225	2.5	184	11.2	6	3.9
None	120	1.1	38	0.4	81	4.9	1	0.7
Not Stated	42	0.4	23	0.3	18	1.1	1	0.7
Total	10,747	100.0	8,955	100.0	1,640	100.0	152	100.0

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Prenatal Care

Over 78 percent of mothers initiated care in the first trimester. Just over one percent did not obtain prenatal care. White women initiated care earlier than Native American women and women from other races. Only 55.7 percent of Native American mothers initiated care in the first trimester, also, almost 5 percent of the Native American mothers, did not obtain any prenatal care.

As table 7 indicates, 17 percent of the pregnancies resulting in low birth weight babies (less than 2,500 grams) had fewer than five prenatal care visits. Almost 40 percent of the Native American low birth weight births had fewer than 5 prenatal care visits.

Table 7

South Dakota Resident Single Live Births by Mother's Race and Number of Prenatal Visits for Low Birth Weight Babies, 1990

Number of Prenatal Care Visits	Race							
	All Races		White		Native American		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	23	5.3	9	2.6	14	17.3	0	0.0
1-4	52	II.8	34	9.6	18	22.2	0	0.0
5-9	158	35.9	130	36.8	27	33.3	1	16.7
10-14	150	34.1	130	36.8	16	19.8	4	66.6
15-19	30	6.8	29	8.2	1	1.2	0	0.0
20 & +	15	3.4	15	4.3	0	0.0	0	0.0
Unknown	12	2.7	6	1.7	5	6.2	1	16.7
Total	440	100.0	353	100.0	81	100.0	6	100.0

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

TABLE 8

SOUTH DAKOTA RESIDENT BIRTHS WITH REPORTED CONGENITAL ANOMALIES,
BY SEX AND MOTHER'S RACE, 1990

		MOTHER'S RACE					
		WHITE		NATIVE AMERICAN		OTHER	
	TOTAL	BABY'S SEX FEMALE	MALE	BABY'S SEX FEMALE	MALE	BABY'S SEX FEMALE	MALE
TOTAL CONGENITAL ANOMALIES	317	125	150	17	21	3	1
ANENCEPHALUS	5	3	2	-	-	-	-
SPINA BIFIDA/MENINGOCELE	4	2	2	-	-	-	-
HYDROCEPHALUS	7	3	2	2	-	-	-
OTHER CENTRAL NERVOUS SYSTEM ANOMALIES	3	-	2	1	-	-	-
HEART MALFORMATIONS	32	14	12	1	5	-	-
OTHER CIRCULATORY/RESPIRTORY ANOMALIES	14	7	5	-	2	-	-
RECTAL ATRESIA/STENOSIS	6	1	4	-	-	1	-
TRACHEO-ESOPHAGEAL FISTULA/ATRESIA	4	1	3	-	-	-	-
OMPHALOCELE/GASTROSCHISIS	6	1	4	-	1	-	-
OTHER GASTROINTESTINAL ANOMALIES	7	3	3	-	1	-	-
MALFORMED GENITALIA	7	-	6	-	-	-	1
RENAL AGENESIS	1	-	1	-	-	-	-
OTHER UROGENITAL ANOMALIES	31	1	27	1	2	-	-
CLEFT LIP/PALATE	16	8	5	2	1	-	-
POLYDACTYLY/SYNDACTYLY/ADACTYLY	21	5	12	2	2	-	-
CLUB FOOT	16	8	7	1	-	-	-
DIAPHRAGMATIC HERNIA	4	4	-	-	-	-	-
MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES	27	15	10	1	1	-	-
DOWN'S SYNDROME	9	5	3	1	-	-	-
OTHER CHROMOSOMAL ANOMALIES	4	3	1	-	-	-	-
OTHER	93	41	39	5	6	2	-

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Infant Mortality

South Dakota Infant Mortality
An Overview: 1990

Infant Deaths	
Number	111
Rate per 1,000 Live Births	10.1
Neonatal Deaths	
Number	58
Rate per 1,000 Live Births	5.3
Postneonatal Deaths	
Number	53
Rate per 1,000 Live Births	4.8
Fetal Deaths	
Number	64
Rate per 1,000 Live Births	5.8

Infant Mortality and Fetal Deaths in South Dakota

During 1990, there were 111 South Dakota resident infant deaths. The infant mortality rate per 1,000 live births was 10.1 compared to last year's infant mortality rate of 9.6. This was an increase of 4.7 percent in the number of infant deaths and an increase of 5.2 percent in the infant mortality rate from 1989.

The number of neonatal deaths totaled 58 for a rate of 5.3 deaths per 1,000 live births. The number of postneonatal deaths was 53 for a rate of 4.8 deaths per 1,000 live births. The neonatal rate increased since 1989 while the postneonatal rate declined.

Fetal deaths decreased from 72 in 1989 to 64 in 1990, this was an 11.1 percent decrease in the number of fetal deaths. The fetal death rate per 1,000 live births decreased from 6.5 in 1989 to 5.8 in 1990, this was a 10.8 percent decrease in the rate.

Table 9 provides a comparison of infant mortality between the United States and South Dakota.

Table 9

Resident Infant Deaths and Infant Mortality Rates
South Dakota and United States
1960-1990

Year	U.S. Infant Deaths		S.D. Infant Deaths	
	Number	Mortality Rate	Number	Mortality Rate
*1990	38,100	9.1	111	10.1
*1989	38,900	9.7	106	9.6
1988	38,910	10.0	112	10.0
1987	38,380	10.1	114	9.9
1986	38,891	10.4	155	13.3
1985	40,030	10.6	118	9.7
1984	39,580	10.8	124	10.0
1983	43,627	11.2	135	10.8
1982	42,401	11.5	131	10.2
1981	43,305	11.9	143	11.2
1980	45,526	12.7	145	10.9
1979	45,665	13.1	146	11.3
1978	45,945	13.8	163	13.4
1977	46,975	14.1	195	16.2
1976	48,265	15.2	199	17.1
1975	50,525	16.1	178	15.8
1974	52,776	16.7	219	19.6
1973	55,581	17.7	196	18.3
1972	60,182	18.5	225	20.7
1971	67,981	19.1	216	18.6
1970	74,667	20.0	228	19.5
1969	75,073	20.9	226	19.8
1968	76,263	21.8	233	20.4
1967	79,028	22.4	252	22.1
1966	85,546	23.7	309	24.6
1965	92,866	24.7	315	23.1
1964	99,783	24.8	350	22.4
1963	103,390	25.2	414	24.8
1962	105,479	25.3	434	25.3
1961	107,956	25.3	409	23.3
1960	110,873	26.0	494	28.1

*U.S. Data are provisional

Source: National Center for Health Statistics, Hyattsville, Maryland 20782
and Center for Health Policy and Statistics, South Dakota Department of Health.

Figure 2

Resident Infant Mortality Rates

South Dakota and United States

1960 - 1990

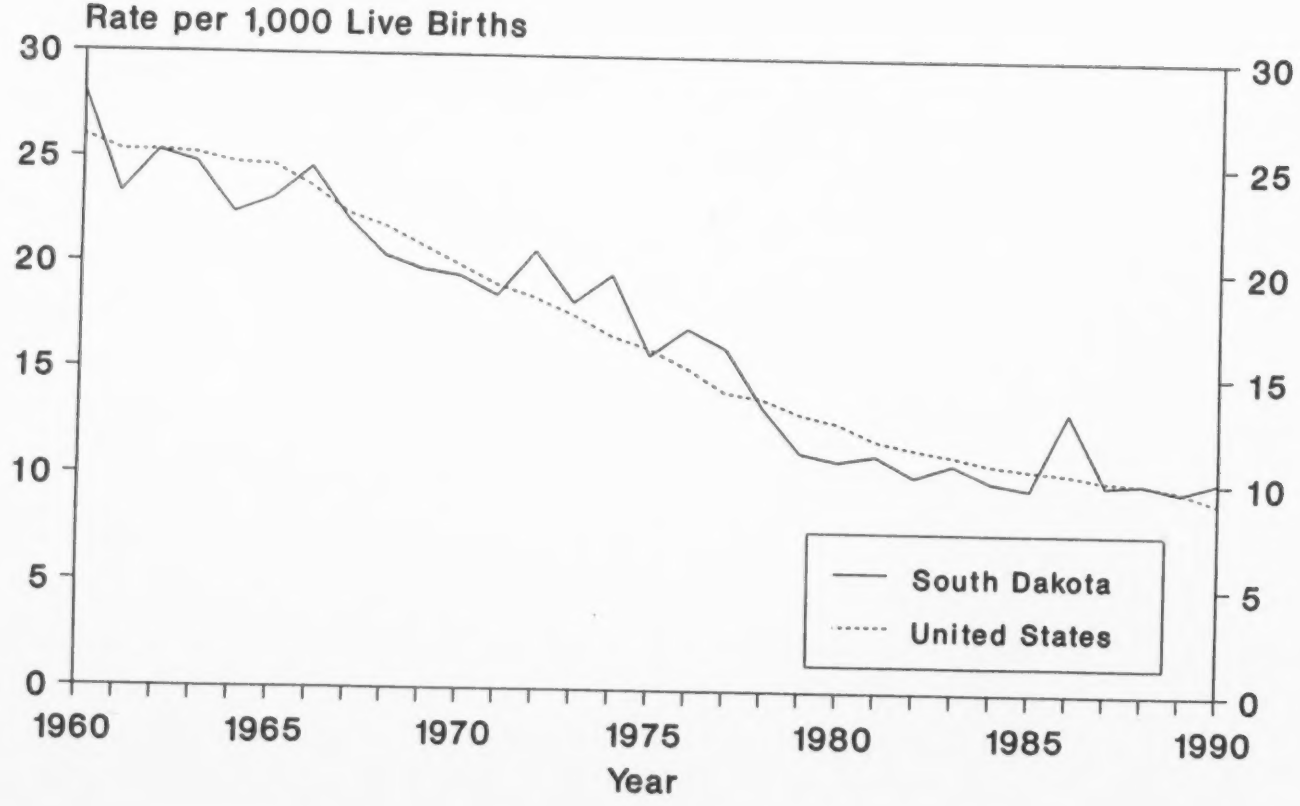


TABLE 10

SOUTH DAKOTA RESIDENT INFANT DEATHS BY AGE AND CAUSE, 1990

	RACE									
		WHITE				NATIVE AMERICAN				OTHER
	TOTAL	UNDER 1 DAY	1 THRU 6 DAYS	7 THRU 27 DAYS	POST NEONATAL	UNDER 1 DAY	1 THRU 6 DAYS	7 THRU 27 DAYS	POST NEONATAL	POST NEONATAL
TOTAL	111	23	9	11	34	11	3	1	18	1
CAUSES OF DEATH										
SUDDEN INFANT DEATH SYNDROME.....(798)	30	-	-	-	18	-	-	-	11	1
CONGENITAL ANOMALIES..(740-759)	29	8	5	5	6	3	2	-	-	-
OTHER CONDITIONS IN PERINATAL PERIOD.....(760-764, 766, 769-779)	18	7	1	3	2	5	-	-	-	-
SHORT GESTATION & LOW BIRTH WEIGHT.....(765)	7	6	-	-	-	1	-	-	-	-
RESPIRATORY DISEASES SYNDROME.....(769)	6	2	1	2	-	-	1	-	-	-
EXTERNAL CAUSES.....(800-999)	5	-	-	-	1	-	-	1	3	-
INTRAUTERINE HYPOXIA & BIRTH ASPHYXIA.....(768)	2	-	-	-	-	2	-	-	-	-
PNEUMONIA & INFLUENZA.(480-487)	2	-	-	-	1	-	-	-	1	-
ALL OTHER CAUSES	12	-	2	1	6	-	-	-	3	-

NOTE: Numbers following cause of death are I.C.D. 9 codes.

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Causes of Infant Death

The overall leading cause of infant death was Sudden Infant Death Syndrome, which caused 30 deaths or 27.0 percent of all infant deaths in 1990. Sudden Infant Death Syndrome was the leading cause in Native American infant mortality, accounting for 11 deaths or 33.3 percent of all Native American infant deaths in 1990, while Congenital Anomalies was the leading cause of white infant mortality, accounting for 24 deaths or 31.2 percent of the white infant mortality.

Table 10 details cause of deaths for resident infants during 1990.

Table 11

South Dakota Resident Infant Deaths and Mortality Rates
by Race, 1980-1990

Year	Infant Deaths							
	White Race		Native American		Other Races		All Races	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1990	77	8.4	33	19.8	1	6.5	111	10.1
1989	64	7.0	40	22.8	2	12.8	106	9.6
1988	87	9.3	25	14.7	0	0.0	112	10.0
1987	76	7.9	36	21.2	2	13.8	114	9.9
1986	100	10.2	52	31.0	3	21.7	155	13.3
1985	89	8.6	29	17.2	0	0.0	118	9.7
1984	94	8.8	28	17.1	2	16.1	124	10.0
1983	88	8.2	46	27.2	1	8.5	135	10.8
1982	91	8.2	37	22.8	3	23.1	131	10.2
1981	108	9.8	33	21.5	2	15.2	143	11.2
1980	103	8.9	42	26.4	0	0.0	145	10.9
80-90	977	8.7	401	22.0	16	10.7	1,394	10.5

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Table 12

South Dakota Resident Neonatal Deaths and Mortality Rates
by Race, 1980-1990

Year	Neonatal Deaths							
	White Race		Native American		Other Races		All Races	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1990	43	4.7	15	9.0	0	0.0	58	5.3
1989	34	3.7	16	9.1	1	6.4	51	4.6
1988	56	6.0	6	3.5	0	0.0	62	5.5
1987	43	4.5	13	7.7	1	6.9	57	5.0
1986	61	6.2	23	13.7	1	7.2	85	7.3
1985	54	5.2	10	5.9	0	0.0	64	5.3
1984	53	5.0	12	7.3	2	16.1	67	5.4
1983	56	5.2	17	10.0	0	0.0	73	5.8
1982	70	6.3	19	11.7	2	15.4	91	7.1
1981	75	6.8	18	11.7	1	7.6	94	7.4
1980	59	5.1	17	10.7	0	0.0	76	5.7
80-90	604	5.4	166	9.1	8	5.3	778	5.9

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Table 13

South Dakota Resident Postneonatal Deaths and Mortality Rates by Race, 1980-1990

Year	Postneonatal Deaths							
	White Race		Native American		Other Races		All Races	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1990	34	3.7	18	10.8	1	6.5	53	4.8
1989	30	3.3	24	13.7	1	6.4	55	5.0
1988	31	3.3	19	11.2	0	0.0	50	4.5
1987	33	3.4	23	13.5	1	6.9	57	4.9
1986	39	4.0	29	17.3	2	14.5	70	6.0
1985	35	3.4	19	11.3	0	0.0	54	4.4
1984	41	3.8	16	9.8	0	0.0	57	4.6
1983	32	3.0	29	17.2	1	8.5	62	5.0
1982	21	1.9	18	11.1	1	7.7	40	3.1
1981	33	3.0	15	9.8	1	7.6	49	3.8
1980	44	3.8	25	15.7	0	0.0	69	5.2
80-90	373	3.3	235	12.9	8	5.3	616	4.7

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Table 14

South Dakota Resident Infant Deaths by Birth Weight and Race, 1990

Infant Deaths	Birthweight in Grams									
	All Birth Weights	499 or less	500-999	1,000-1,499	1,500-1,999	2,000-2,499	2,500-2,999	3,000-3,499	3,500-3,999	4,000-4,999
Total										
All Races	111	12	13	10	7	9	13	25	18	4
Neonatal										
White	43	10	6	6	4	3	3	6	4	1
Native American	15	2	6	2	1	1	1	1	1	0
Total	58	12	12	8	5	4	4	7	5	1
Postneonatal										
White	34	0	1	2	2	4	4	12	6	3
Native American	18	0	0	0	0	1	5	5	7	0
Other	1	0	0	0	0	0	0	1	0	0
Total	53	0	1	2	2	5	9	18	13	3

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Mortality

South Dakota Mortality
An Overview: 1990

Total South Dakota Resident Deaths	6,320
Crude Death Rates per 1,000 Population	
South Dakota	9.1
United States (Provisional)	8.6
Age-Adjusted Death Rate per 1,000 Population	
South Dakota	4.5
United States (Provisional)	5.2

Mortality and Mortality Rates

There were 6,320 South Dakota resident deaths during 1990, compared to 6,534 in 1989. While the United States provisional crude death rate was 8.6 deaths per 1,000 population during 1990, South Dakota's rate was 9.1 deaths per 1,000 population. When the rates are compared after adjustments have been made for the age distribution of the population of the United States and South Dakota, the United States had about 15.6 percent more deaths per 1,000 population than South Dakota. This was obtained by comparing the provisional age-adjusted rate for the United States in 1990 of 5.2 deaths per 1,000 population to South Dakota's age-adjusted rate of 4.5 deaths per 1,000 population.

Table 15 provides a comparison of the number of deaths and crude death rate between the United States and South Dakota from 1960-1990. There has been little change in the number of deaths and the rate for South Dakota over these years.

Table 15

Resident Deaths and Crude Death Rates
South Dakota and United States
1960-1990

Year	U.S. Deaths		S.D. Deatns	
	Number	Crude Rate	Number	Crude Rate
*1990	2,162,000	8.6	6,320	9.1
*1989	2,155,000	8.7	6,534	9.2
1988	2,167,999	8.8	6,567	9.2
1987	2,123,323	8.7	6,658	9.4
1986	2,105,361	8.7	6,583	9.3
1985	2,086,440	8.7	6,604	9.4
1984	2,039,369	8.6	6,512	9.3
1983	2,019,201	8.6	6,622	9.5
1982	1,974,797	8.5	6,588	9.5
1981	1,977,981	8.6	6,434	9.3
1980	1,989,841	8.8	6,539	9.5
1979	1,913,841	8.5	6,329	9.2
1978	1,927,788	8.7	6,480	9.4
1977	1,899,597	8.6	6,281	9.1
1976	1,909,440	8.8	6,727	9.8
1975	1,892,879	8.8	6,470	9.5
1974	1,934,388	9.0	6,577	9.7
1973	1,973,003	9.3	6,626	9.7
1972	1,963,944	9.4	7,038	10.4
1971	1,927,534	9.3	6,704	9.9
1970	1,921,031	9.5	6,547	9.8
1969	1,921,990	9.5	6,747	10.1
1968	1,930,082	9.7	6,532	9.8
1967	1,851,323	9.4	6,349	9.5
1966	1,863,149	9.5	6,576	9.6
1965	1,828,136	9.4	6,520	9.4
1964	1,798,051	9.4	6,599	9.4
1963	1,813,549	9.6	6,654	9.4
1962	1,756,720	9.5	6,577	9.3
1961	1,701,522	9.3	6,234	9.0
1960	1,711,982	9.5	6,616	9.7

*U.S. data are provisional

Source: National Center for Health Statistics, Hyattsville, Maryland 20782 and Center for Health Policy and Statistics, South Dakota Department of Health.

Leading Causes of Death

South Dakota resident leading causes of death are presented in table 16. Heart Disease continued as the number one cause of death followed by cancer. These two causes of death accounted for approximately 59 percent of the resident deaths during 1990. Diseases of the heart and malignant neoplasms accounted for over 60 percent of white deaths and about 31 percent of Native American deaths. Almost 18 percent of the Native American deaths were caused by accidents. More than 5 percent of all resident deaths were caused by accidents.

Median Age at Death

The median age at death for South Dakota resident males and females was 74 and 82 respectively during 1990. Table 17 provides the median age of death by cause for residents of South Dakota. The median age at death was 78 for all South Dakotans, for white residents this figure was 79 compared to 54 for Native Americans.

Leading Cause of Death by Age

The leading cause of death by age group are presented in table 18. Excluding infants, accidents were the leading cause of death through age 34. From 35-64, the leading cause was malignant neoplasms. The leading cause of death after age 64 was diseases of the heart.

TABLE 16

SOUTH DAKOTA RESIDENT LEADING CAUSES OF DEATH, 1990

CAUSE OF DEATH	ALL RACES				WHITE			NATIVE AMERICAN		
	RANK	DEATHS	%	RATE	RANK	DEATHS	%	RANK	DEATHS	%
SOUTH DAKOTA (ALL DEATHS)		6,320				5,884			423	
DISEASE OF THE HEART...(390-398, 402, ...404-429)	1	2,322	36.7	333.6	1	2,234	38.0	1	85	20.1
MALIGNANT NEOPLASMS.....(140-208)	2	1,377	21.8	197.8	2	1,327	22.6	3	47	11.1
CEREBROVASCULAR DISEASES....(430-438)	3	520	8.2	74.7	3	503	8.5	6	16	3.8
ACCIDENTS.....(E800-E949)	4	332	5.2	47.7	5	256	4.3	2	75	17.7
CHRONIC OBSTRUCTIVE PULMONARY DISEASES .....(490-496)	5	271	4.3	38.9	4	258	4.4	8	13	3.1
PNEUMONIA AND INFLUENZA.....(480-487)	6	252	4.0	36.2	6	239	4.1	8	13	3.1
DIABETES MELLITUS.....(250)	7	119	1.9	17.1	7	104	1.8	7	15	3.5
SUICIDE.....(E950-E959)	8	93	1.5	13.4	8	72	1.2	5	19	4.5
ATHEROSCLEROSIS.....(440)	9	56	0.9	8.0	9	56	0.9	-	-	-
AORTIC ANEURYSM.....(441)	10	54	0.9	7.8	10	53	0.9	-	-	-
CHRONIC LIVER DISEASE AND CIRRHOSIS .....(571)	-	-	-	-	-	-	-	4	24	5.7
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD.....(760-779)	-	-	-	-	-	-	-	10	9	2.1
HOMICIDE AND LEGAL INTERVENTION .....(E960-E978)	-	-	-	-	-	-	-	10	9	2.1
ALL OTHER CAUSES	-	924	14.6	132.8	-	782	13.3	-	98	23.2

Rate for all races are per 100,000 population.
Numbers following cause of death are I.C.D. 9 codes.
Due to rounding of disease specific death rates, these may not sum to state death rate.

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

TABLE 17

Median Age At Death For South Dakota Residents
From The Ten Leading Causes Of Death
By Race, 1990

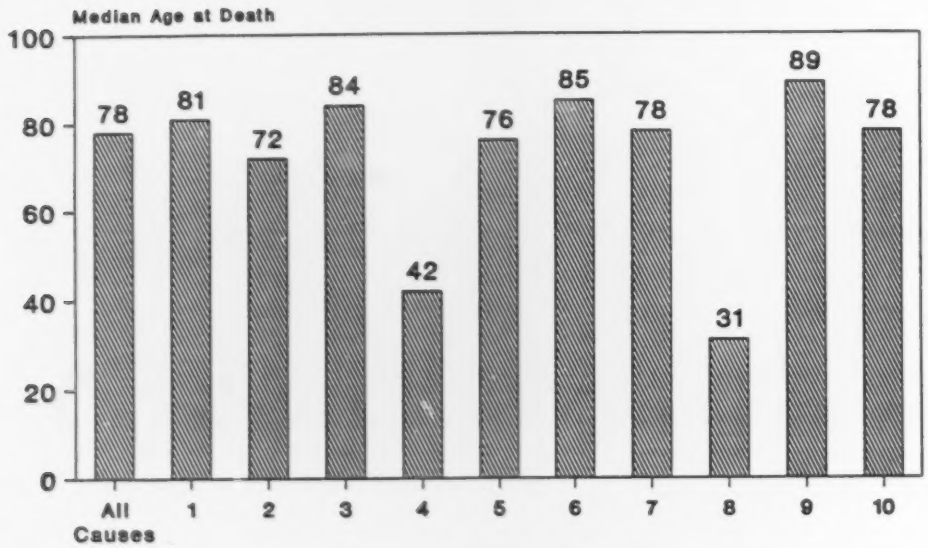
CAUSE OF DEATH	MEDIAN AGE AT DEATH IN YEARS		
	ALL RACES	WHITE	NATIVE AMERICAN
SOUTH DAKOTA (ALL DEATHS)	78	79	54
DISEASE OF THE HEART...(390-398, 402, ...404-429)	81	81	67
MALIGNANT NEOPLASMS.....(140-208)	72	73	63
CEREBROVASCULAR DISEASES....(430-438)	84	84	74
ACCIDENTS.....(E800-E949)	42	54	26
CHRONIC OBSTRUCTIVE PULMONARY DISEASES .....(490-496)	76	76	75
PNEUMONIA AND INFLUENZA.....(480-487)	85	85	55
DIABETES MELLITUS.....(250)	78	79	65
SUICIDE.....(E950-E959)	31	33	25
ATHEROSCLEROSIS.....(440)	89	89	-
AORTIC ANEURYSM.....(441)	78	79	-
CHRONIC LIVER DISEASE AND CIRRHOSIS .....(571)	-	-	49
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD.....(760-779)	-	-	LESS THAN 1
HOMICIDE AND LEGAL INTERVENTION .....(E960-E978)	-	-	22
ALL OTHER CAUSES	77	79	54

Numbers following cause of death are I.C.D. 9 codes.

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Figure 3

Median Age at Death for the Ten Leading Causes of Death, South Dakota Residents 1990



Median Age at Death in Years, 1990

Rank	Cause of Death	Median Age
	All causes	78
1	Diseases of the Heart	81
2	Malignant Neoplasms	72
3	Cerebrovascular Diseases	84
4	Accidents	42
5	Chronic Obstructive Pulmonary Disease	76
6	Pneumonia and Influenza	85
7	Diabetes Mellitus	78
8	Suicide	31
9	Atherosclerosis	89
10	Aortic Aneurysm	78

Table 18

South Dakota Resident Five Leading Cause of Death by age groups, 1990

Rank	All Ages	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65 & Over
1	Diseases of the Heart 2,322	Sudden Infant Death Syndrome 30	Accidents 17	Accidents 19	Accidents 58	Accidents 48	Malignant Neoplasms 37	Malignant Neoplasms 80	Malignant Neoplasms 221	Diseases of the Heart 2,017
2	Malignant Neoplasms 1,377	Congenital Anomalies 29	Congenital Anomalies 3	Malignant Neoplasms 3	Suicide 29	Suicide 20	Accidents 27	Diseases of the Heart 66	Diseases of the Heart 197	Malignant Neoplasms 1,023
3	Cerebro-vascular Disease 520	Other Conditions in Perinatal Period 18	------	Chronic Obstruc-tive Pulmonary Disease 2	Homicide and Legal Inter-vention 4	Diseases of the Heart 9	Diseases of the Heart 27	Accidents 26	Cerebro-Vascular Disease 33	Cerebro-Vascular Disease 478
4	Accidents 332	Short Gestation and Low Birth Weight 7	------	Homicide and Legal Inter-vention 2	Diseases of the Heart 2	Malignant Neoplasms 9	Suicide 16	Chronic Liver Disease and Cirrhosis 11	Accidents 28	Chronic Obstructive Pulmonary Disease 247
5	Chronic Obstructive Pulmonary Disease 271	Respiratory Diseases Syndrome 6	------	Suicide 2	Malignant Neoplasms 2	Homicide and Legal Inter-vention 4	Chronic Liver Disease and Cirrhosis 7	Suicide 8	Chronic Obstructive Pulmonary Disease 21	Pneumonia and Influenza 229
Total Deaths All Causes	6,320	111	27	33	111	109	142	248	596	4,943

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

TABLE 19
SOUTH DAKOTA RESIDENT DEATHS FOR 15 LEADING CAUSES AND SELECTED COMPONENTS: 1980, 1989, AND 1990

CAUSE OF DEATH	YEAR OF DEATH	ALL AGES	UNDER 1 YEAR	1-4 YEARS	5-14 YEARS	15-24 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS	65-74 YEARS	75-84 YEARS	85 YEARS AND OVER
ALL CAUSES	1990	6320	111	27	33	111	109	142	248	596	1253	1781	1909
	1989	6534	106	22	34	104	121	144	262	591	1364	1840	1946
	1980	6539	145	35	38	175	138	158	358	744	1331	1812	1605
DISEASES OF HEART.....390-398,402,404-429	1990	2322	2	1	1	2	9	27	66	197	451	703	863
	1989	2383	3	1	.	1	7	26	59	208	492	693	893
	1980	2587	3	1	.	3	5	26	113	312	574	829	721
RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE.....390-398	1990	12	.	.	.	.	.	.	.	3	4	3	2
	1989	9	.	.	.	.	.	1	.	1	4	2	1
	1980	26	.	.	.	1	.	1	.	7	7	7	3
HYPERTENSIVE HEART DISEASE.....402	1990	21	.	.	.	.	.	.	.	2	1	6	12
	1989	20	.	.	.	.	.	.	1	2	3	4	10
	1980	36	.	.	.	.	.	.	.	1	8	10	17
HYPERTENSIVE HEART AND RENAL DISEASE.....404	1990	4	.	.	.	.	.	.	.	.	1	3	.
	1989	5	.	.	.	.	.	.	.	.	.	2	3
	1980	17	.	.	.	.	.	.	.	.	1	6	10
ISCHEMIC HEART DISEASE.....410-414	1990	1680	.	.	.	.	4	20	46	150	342	539	579
	1989	1670	.	.	.	.	.	11	36	161	362	506	594
	1980	1981	.	.	.	.	2	18	83	248	466	648	516
ACUTE MYOCARDIAL INFARCTION.....410	1990	1013	.	.	.	.	3	18	34	113	244	334	267
	1989	1046	.	.	.	.	.	7	23	119	259	341	297
	1980	1278	.	.	.	.	1	16	68	199	353	418	223
OTHER ACUTE AND SUBACUTE FORMS OF ISCHEMIC HEART DISEASE.....411	1990	0	.	.	.	.	.	.	.	.	.	.	.
	1989	0	.	.	.	.	.	.	.	.	.	.	.
	1980	7	.	.	.	.	.	.	.	3	1	2	1
ANGINA PECTORIS.....413	1990	4	.	.	.	.	.	.	.	.	1	3	.
	1989	1	.	.	.	.	.	.	.	.	.	.	1
	1980	0	.	.	.	.	.	.	.	.	.	.	.
OLD MYOCARDIAL INFARCTION AND OTHER FORMS OF CHRONIC ISCHEMIC HEART DISEASE.....412,414	1990	663	.	.	.	.	1	2	12	37	97	202	312
	1989	623	.	.	.	.	.	4	13	42	103	165	296
	1980	696	.	.	.	.	1	2	15	46	112	228	292
OTHER DISEASES OF ENDOCARDIUM.....424	1990	40	.	.	.	1	.	1	1	2	5	11	19
	1989	39	.	.	.	.	.	.	.	3	7	9	20
	1980	21	.	.	.	.	.	.	1	2	5	9	4
ALL OTHER FORMS OF HEART DISEASE.....415-423,425-429	1990	565	2	1	1	1	5	6	19	40	98	141	251
	1989	640	3	1	.	1	7	14	22	41	116	170	265
	1980	506	3	1	.	2	3	7	29	54	87	149	171

TABLE 19 (Con't)
SOUTH DAKOTA RESIDENT DEATHS FOR 15 LEADING CAUSES AND SELECTED COMPONENTS: 1980, 1989, AND 1990

CAUSE OF DEATH	YEAR OF DEATH	ALL AGES	UNDER 1 YEAR	1-4 YEARS	5-14 YEARS	15-24 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS	65-74 YEARS	75-84 YEARS	85 YEARS AND OVER
MALIGNANT NEOPLASMS, INCLUDING	1990	1377	1	1	3	2	9	37	80	221	422	373	228
NEOPLASMS OF LYMPHATIC	1989	1461	.	3	7	4	12	30	82	208	441	453	221
HEMATOPOIETIC TISSUES.....140-208	1980	1231	.	3	4	9	12	27	100	215	366	319	176
MALIGNANT NEOPLASMS OF LIP, ORAL	1990	19	.	.	.	.	.	1	2	5	4	3	4
CAVITY, AND PHARYNX.....140-149	1989	19	.	.	.	.	.	.	1	5	6	7	.
	1980	17	.	.	.	.	.	1	1	3	7	4	1
MALIGNANT NEOPLASMS OF DIGESTIVE	1990	377	.	.	.	1	1	10	20	61	103	111	70
ORGANS AND	1989	365	.	.	.	1	.	3	16	37	107	116	85
PERITONEUM.....150-159	1980	376	.	.	.	.	2	3	25	62	106	103	75
MALIGNANT NEOPLASMS OF RESPIRATORY	1990	322	.	.	.	.	.	6	14	75	129	77	21
AND INTRATHORACIC	1989	353	.	.	.	.	2	4	22	78	125	101	21
ORGANS.....160-165	1980	253	.	.	.	.	1	4	39	51	81	64	13
MALIGNANT NEOPLASM OF	1990	113	.	.	.	.	1	7	15	14	37	19	20
BREAST.....174-175	1989	126	.	.	.	.	1	10	15	22	35	26	17
	1980	114	.	.	.	.	.	8	12	23	37	20	14
MALIGNANT NEOPLASMS OF GENITAL	1990	175	.	.	.	.	.	3	7	18	38	61	48
ORGANS.....179-187	1989	202	.	.	.	.	.	2	7	20	58	79	36
	1980	150	.	.	.	.	1	2	8	25	41	41	32
MALIGNANT NEOPLASMS OF URINARY	1990	63	.	.	.	.	1	.	2	9	17	19	15
ORGANS.....188-189	1989	77	.	.	.	.	.	.	5	10	19	32	11
	1980	62	.	.	1	1	.	.	1	12	22	16	9
MALIGNANT NEOPLASMS OF ALL OTHER	1990	162	.	.	1	1	4	6	11	22	51	41	25
AND UNSPECIFIED	1988	156	.	1	4	.	6	7	7	16	39	49	27
SITES.....170-173,190-199	1980	128	.	.	1	3	5	5	8	26	30	33	17
LEUKEMIA.....204-208	1990	55	1	.	1	.	1	2	1	5	15	21	8
	1989	59	.	2	.	2	1	2	4	7	19	12	10
	1980	55	.	3	2	2	.	2	3	5	15	15	8
OTHER MALIGNANT NEOPLASMS OF	1990	91	.	1	1	.	1	2	8	12	28	21	17
LYMPHATIC AND HEMATOPOIETIC	1989	104	.	.	3	1	2	2	5	13	33	31	14
TISSUES.....200-203	1980	76	.	.	.	3	3	2	3	8	27	23	7
CEREBROVASCULAR DISEASE....430-438	1990	520	.	.	.	.	1	2	6	33	69	166	243
	1989	509	.	.	.	1	.	2	6	20	68	182	230
	1980	622	.	.	1	.	3	7	5	28	101	221	256
ACCIDENTS AND ADVERSE	1990	332	4	17	19	58	48	27	26	28	33	38	34
EFFECTS.....E800-E949	1989	331	4	6	22	65	51	24	33	23	33	42	28
	1980	421	3	17	29	118	62	36	36	31	30	28	31
MOTOR VEHICLE	1990	164	.	7	8	45	30	15	13	18	9	15	4
ACCIDENTS.....E810-E825	1989	167	.	3	14	48	38	14	15	10	13	10	2
	1980	249	.	5	19	92	42	27	21	14	14	12	3

TABLE 19 (Con't)
SOUTH DAKOTA RESIDENT DEATHS FOR 15 LEADING CAUSES
AND SELECTED COMPONENTS: 1980, 1988, AND 1989

CAUSE OF DEATH	YEAR OF DEATH	ALL AGES	UNDER 1 YEAR	1-4 YEARS	5-14 YEARS	15-24 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS	65-74 YEARS	75-84 YEARS	85 YEARS AND OVER
ALL OTHER ACCIDENTS AND ADVERSE EFFECTS.....E800-E807 E826-E949	1990	168	4	10	11	13	18	12	13	10	24	23	30
	1989	164	4	3	8	17	13	10	18	13	20	32	26
	1980	172	3	12	10	26	20	9	15	17	16	16	28
CHRONIC OBSTRUCTIVE PULMONARY DISEASES AND ALLIED CONDITIONS.....490-496	1990	271	.	.	2	.	.	1	.	21	90	107	50
	1989	264	.	.	1	1	1	3	5	25	77	108	43
	1980	189	.	.	.	.	.	2	12	25	58	69	23
PNEUMONIA AND INFLUENZA....480-487	1990	252	2	.	.	1	1	2	5	12	18	81	130
	1989	229	2	.	.	1	4	1	6	5	19	60	131
	1980	218	4	3	.	1	1	2	3	4	19	80	101
DIABETES MELLITUS.....250	1990	119	.	.	.	1	.	.	4	11	27	41	35
	1989	148	.	1	.	.	3	3	9	17	35	46	34
	1980	84	.	.	.	2	2	2	3	10	19	25	21
SUICIDE.....E950-E959	1990	93	.	.	2	29	20	16	8	5	4	8	1
	1989	91	.	.	.	23	14	9	10	10	13	10	2
	1980	89	.	.	2	22	18	7	15	8	8	7	2
CHRONIC LIVER DISEASE AND CIRRHOSIS.....571	1990	51	.	.	.	.	2	7	11	13	7	9	2
	1989	73	.	.	.	.	5	13	17	10	17	9	2
	1980	76	1	.	.	1	5	11	27	16	10	3	2
ATHEROSCLEROSIS.....440	1990	56	.	.	.	.	.	.	.	.	2	15	39
	1989	63	.	.	.	.	.	.	1	1	4	16	41
	1980	116	.	.	.	.	.	.	.	4	8	35	69
NEPHRITIS, NEPHROTIC SYNDROME, AND NEPHROSIS.....580-589	1990	50	1	.	.	1	1	.	4	1	7	12	23
	1989	48	.	.	.	.	.	.	2	4	7	12	23
	1980	54	.	.	.	.	.	1	1	2	12	18	20
HOMICIDE AND LEGAL INTERVENTION.....E960-E978	1990	20	1	1	2	4	4	2	3	1	.	2	.
	1989	21	2	.	1	1	5	5	.	3	3	.	1
	1980	24	.	.	1	9	5	3	5	1	.	.	.
SEPTICEMIA.....038	1990	22	.	.	.	1	.	.	2	3	5	4	7
	1989	28	1	.	.	.	.	.	.	1	6	8	12
	1980	28	1	1	.	.	.	1	.	6	3	8	8
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD.....760-779	1990	35	34	.	1	.	.	.	.	.	.	.	.
	1989	36	35	1	.	.	.	.	.	.	.	.	.
	1980	54	54	.	.	.	.	.	.	.	.	.	.
CONGENITAL ANOMALIES.....740-759	1990	40	29	3	.	1	1	.	1	1	2	1	1
	1989	44	21	6	1	.	2	3	3	.	3	3	2
	1980	53	38	3	.	3	3	.	2	1	2	1	.

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

TABLE 20

SOUTH DAKOTA RESIDENT AGE-SPECIFIC AND AGE-ADJUSTED DEATH RATES FOR 15 LEADING CAUSES AND SELECTED COMPONENTS: 1980, 1989, AND 1990

CAUSE OF DEATH	YEAR OF DEATH	ALL AGES	UNDER 1 YEAR	1-4 YEARS	5-14 YEARS	15-24 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS	65-74 YEARS	75-84 YEARS	85 YRS & OVER	AGE ADJUSTED RATE
ALL CAUSES	1990	908.0	1158.7	60.1	28.9	113.5	99.6	149.1	395.7	996.7	2300.3	5159.8	14307.1	451.1
	1989	916.4	915.5	48.3	31.2	98.4	99.3	156.1	409.5	940.0	2530.2	5521.9	15108.7	461.8
	1980	946.6	1102.1	77.3	35.4	129.4	134.2	237.8	551.0	1151.5	2634.9	6024.5	15392.7	538.2
DISEASES OF HEART.....390-398,402,404-429	1990	333.6	20.9	2.2	0.9	2.0	8.2	28.4	105.3	329.4	828.0	2036.7	6467.8	138.4
	1989	334.2	25.9	2.2	.	0.9	5.7	28.2	92.2	330.8	912.7	2079.7	6933.2	142.4
	1980	374.5	22.8	2.2	.	2.2	4.9	39.1	173.9	482.9	1136.3	2756.3	6914.7	188.3
RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE.....390-398	1990	1.7	.	.	.	.	.	.	.	5.0	7.3	8.7	15.0	1.0
	1989	1.3	.	.	.	.	.	1.1	.	1.6	7.4	6.0	7.8	0.8
	1980	3.8	.	.	.	0.7	.	1.5	.	10.8	13.9	23.3	28.8	2.4
HYPERTENSIVE HEART DISEASE.402	1990	3.0	.	.	.	.	.	.	.	3.3	1.8	17.4	89.9	0.9
	1989	2.8	.	.	.	.	.	.	1.6	3.2	5.6	12.0	77.6	1.1
	1980	5.2	.	.	.	.	.	.	.	1.5	15.8	33.2	163.0	1.9
HYPERTENSIVE HEART AND RENAL DISEASE.....404	1990	0.6	.	.	.	.	.	.	.	.	1.8	8.7	.	0.2
	1989	0.7	.	.	.	.	.	.	.	.	.	6.0	23.3	0.2
	1980	2.5	.	.	.	.	.	.	.	.	2.0	19.9	95.9	0.7
ISCHEMIC HEART DISEASE.....410-414	1990	241.4	.	.	.	.	3.7	21.0	73.4	250.8	627.9	1561.5	4339.4	101.7
	1989	234.2	.	.	.	.	.	11.9	56.3	256.1	671.5	1518.5	4611.8	100.4
	1980	286.8	.	.	.	.	1.9	27.1	127.8	383.8	922.5	2154.5	4948.7	145.6
ACUTE MYOCARDIAL INFARCTION.....410	1990	145.5	.	.	.	.	2.7	18.9	54.3	189.0	447.9	967.6	2001.0	68.6
	1989	146.7	.	.	.	.	.	7.6	35.9	189.3	480.4	1023.3	2305.9	67.8
	1980	185.0	.	.	.	.	1.0	24.1	104.7	308.0	698.8	1389.8	2138.7	104.4
OTHER ACUTE AND SUBACUTE FORMS OF ISCHEMIC HEART DISEASE.....411	1990	.	.	.	.	.	.	.	.	.	.	.	.	.
	1989	0.0	.	.	.	.	.	.	.	.	.	.	.	0.0
	1980	1.0	.	.	.	.	.	.	.	4.6	2.0	6.6	9.6	0.6
ANGINA PECTORIS.....413	1990	0.6	.	.	.	.	.	.	.	.	1.8	8.7	.	0.2
	1989	0.1	.	.	.	.	.	.	.	.	.	.	7.8	0.0
	1980	0.0	.	.	.	.	.	.	.	.	.	.	.	0.0
OLD MYOCARDIAL INFARCTION AND OTHER FORMS OF CHRONIC ISCHEMIC HEART DISEASE.412,414	1990	95.3	.	.	.	.	0.9	2.1	19.1	61.9	178.1	585.2	2338.3	32.9
	1989	87.4	.	.	.	.	.	4.3	20.3	66.8	191.1	495.2	2298.1	32.5
	1980	100.8	.	.	.	.	1.0	3.0	23.1	71.2	221.7	758.1	2800.4	40.6
OTHER DISEASES OF ENDOCARDIUM.....424	1990	5.7	.	.	.	1.0	.	1.1	1.6	3.3	9.2	31.9	142.4	2.2
	1989	5.5	.	.	.	.	.	.	.	4.8	13.0	27.0	155.3	1.9
	1980	3.0	.	.	.	.	.	.	1.5	3.1	9.9	29.9	38.4	1.5
ALL OTHER FORMS OF HEART DISEASE.....415-423,425-429	1990	81.2	20.9	2.2	0.9	1.0	4.6	6.3	30.3	66.9	179.9	408.5	1801.1	32.4
	1989	89.8	25.9	2.2	.	0.9	5.7	15.2	34.4	65.2	215.2	510.2	2057.5	38.0
	1980	73.3	22.8	2.2	.	1.5	2.9	10.5	44.6	83.6	172.2	495.4	1640.0	36.1

TABLE 20 (Con't)

SOUTH DAKOTA RESIDENT AGE-SPECIFIC AND AGE-ADJUSTED DEATH RATES FOR 15 LEADING CAUSES AND SELECTED COMPONENTS: 1980, 1989, AND 1990

CAUSE OF DEATH	YEAR OF DEATH	ALL AGES	UNDER 1 YEAR	1-4 YEARS	5-14 YEARS	15-24 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS	65-74 YEARS	75-84 YEARS	85 YRS & OVER	AGE ADJUSTED RATE[1]
MALIGNANT NEOPLASMS, INCLUDING	1990	197.8	10.4	2.2	2.6	2.0	8.2	38.9	127.7	369.6	774.7	1080.6	1708.8	113.5
NEOPLASMS OF LYMPHATIC AND	1989	204.9	.	6.6	6.4	3.8	9.8	32.5	128.2	330.8	818.1	1359.5	1715.8	117.9
HEMATOPOIETIC TISSUES...140-208	1980	178.2	.	6.6	3.7	6.7	11.7	40.6	153.9	332.8	724.5	1060.6	1687.9	112.8
MALIGNANT NEOPLASMS OF LIP, ORAL	1990	2.7	.	.	.	.	.	1.1	3.2	8.4	7.3	8.7	30.0	1.8
CAVITY, AND PHARYNX...140-149	1989	2.7	.	.	.	.	.	.	1.6	8.0	11.1	21.0	.	1.7
	1980	2.5	.	.	.	.	.	1.5	1.5	4.6	13.9	13.3	9.6	1.7
MALIGNANT NEOPLASMS OF DIGESTIVE	1990	54.2	.	.	.	1.0	0.9	10.5	31.9	102.0	189.1	321.6	524.6	29.9
ORGANS AND	1989	51.2	.	.	.	0.9	.	3.3	25.0	58.9	198.5	348.1	659.9	25.8
PERITONEUM.....150-159	1980	54.4	.	.	.	.	1.9	4.5	38.5	96.0	209.8	342.5	719.3	31.3
MALIGNANT NEOPLASMS OF	1990	46.3	.	.	.	.	.	6.3	22.3	125.4	236.8	223.1	157.4	29.3
RESPIRATORY AND INTRATHORACIC	1989	49.5	.	.	.	.	1.6	4.3	34.4	124.1	231.9	303.1	163.0	31.8
ORGANS.....160-165	1980	36.6	.	.	.	.	1.0	6.0	60.0	78.9	160.3	212.8	124.7	26.2
MALIGNANT NEOPLASM OF	1990	16.2	.	.	.	.	0.9	7.4	23.9	23.4	67.9	55.0	149.9	10.5
BREAST.....174-175	1989	17.7	.	.	.	.	0.8	10.8	23.4	35.0	64.9	78.0	132.0	12.1
	1980	16.5	.	.	.	.	.	12.0	18.5	35.6	73.2	66.5	134.3	11.8
MALIGNANT NEOPLASMS OF GENITAL	1990	25.1	.	.	.	.	.	3.2	11.2	30.1	69.8	176.7	359.7	11.6
ORGANS.....179-187	1989	28.3	.	.	.	.	.	2.2	10.9	31.8	107.6	237.1	279.5	14.2
	1980	21.7	.	.	.	.	1.0	3.0	12.3	38.7	81.2	136.3	306.9	12.3
MALIGNANT NEOPLASMS OF URINARY	1990	9.1	.	.	.	.	0.9	.	3.2	15.1	31.2	55.0	112.4	4.5
ORGANS.....188-189	1989	10.8	.	.	.	.	.	.	7.8	15.9	35.2	96.0	85.4	5.8
	1980	9.0	.	.	0.9	0.7	.	.	1.5	18.6	43.6	53.2	86.3	5.2
MALIGNANT NEOPLASMS OF ALL OTHER	1990	23.3	.	.	0.9	1.0	3.7	6.3	17.6	36.8	93.6	118.8	187.4	13.9
AND UNSPECIFIED.170-173,190-199	1989	21.9	.	2.2	3.7	.	4.9	7.6	10.9	25.4	72.3	147.0	209.6	12.6
	1980	18.5	.	.	0.9	2.2	4.9	7.5	12.3	40.2	59.4	109.7	163.0	12.3
LEUKEMIA.....204-208	1990	7.9	10.4	.	0.9	.	0.9	2.1	1.6	8.4	27.5	60.8	60.0	4.2
	1989	8.3	.	4.4	.	1.9	0.8	2.2	6.3	11.1	35.2	36.0	77.6	5.2
	1980	8.0	.	6.6	1.9	1.5	.	3.0	4.6	7.7	29.7	49.9	76.7	5.1
OTHER MALIGNANT NEOPLASMS OF	1990	13.1	.	2.2	0.9	.	0.9	2.1	12.8	20.1	51.4	60.8	127.4	7.7
LYMPHATIC AND HEMATOPOIETIC	1989	14.6	.	.	2.7	0.9	1.6	2.2	7.8	20.7	61.2	93.0	108.7	8.7
TISSUES.....200-203	1980	11.0	.	.	.	2.2	2.9	3.0	4.6	12.4	53.4	76.5	67.1	6.9
CEREBROVASCULAR DISEASE..430-438	1990	74.7	.	.	.	.	0.9	2.1	9.6	55.2	126.7	480.9	1821.2	25.5
	1989	71.4	.	.	.	0.9	.	2.2	9.4	31.8	126.1	546.2	1785.7	24.6
	1980	90.0	.	.	0.9	.	2.9	10.5	7.7	43.3	199.9	734.8	2455.2	35.7
ACCIDENTS AND ADVERSE	1990	47.7	41.8	37.8	16.6	59.3	43.9	28.4	41.5	46.8	60.6	110.1	254.8	41.9
EFFECTS.....E800-E949	1989	46.4	34.5	13.2	20.2	61.5	41.9	26.0	51.6	36.6	61.2	126.0	217.4	41.2
	1980	60.9	22.8	37.5	27.0	87.3	60.3	54.2	55.4	48.0	59.4	93.1	297.3	56.2
MOTOR VEHICLE	1990	23.6	.	15.6	7.0	46.0	27.4	15.8	20.7	30.1	16.5	43.5	30.0	23.7
ACCIDENTS.....E810-E825	1989	23.4	.	6.6	12.8	45.4	31.2	15.2	23.4	15.9	24.1	30.0	15.5	23.8
	1980	36.0	.	11.0	17.7	68.1	40.8	40.6	32.3	21.7	27.7	39.9	28.8	36.0

TABLE 20 (Con't)
SOUTH DAKOTA RESIDENT AGE-SPECIFIC AND AGE-ADJUSTED DEATH RATES FOR 15 LEADING CAUSES AND SELECTED COMPONENTS: 1980, 1989, AND 1990

CAUSE OF DEATH	YEAR OF DEATH	ALL AGES	UNDER 1 YEAR	1-4 YEARS	5-14 YEARS	15-24 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS	65-74 YEARS	75-84 YEARS	85 YRS & OVER	AGE ADJUSTED RATE[1]
ALL OTHER ACCIDENTS AND	1990	24.1	41.8	22.3	9.6	13.3	16.5	12.6	20.7	16.7	44.1	66.6	224.8	18.3
ADVERSE EFFECTS.....E800-E807	1989	23.0	34.5	6.6	7.3	16.1	10.7	10.8	28.1	20.7	37.1	96.0	201.9	17.4
E826-E949	1980	24.9	22.8	26.5	9.3	19.2	19.5	13.5	23.1	26.3	31.7	53.2	268.5	20.2
CHRONIC OBSTRUCTIVE PULMONARY	1990	38.9	.	.	1.8	.	.	1.1	.	35.1	165.2	310.0	374.7	17.7
DISEASES AND ALLIED	1989	37.0	.	.	0.9	0.9	0.8	3.3	7.8	39.8	142.8	324.1	333.9	18.5
CONDITIONS.....490-496	1980	27.4	.	.	.	.	.	3.0	18.5	38.7	114.8	229.4	220.6	15.8
PNEUMONIA AND INFLUENZA..480-487	1990	36.2	20.9	.	.	1.0	0.9	2.1	8.0	20.1	33.0	234.7	974.3	11.9
	1989	32.1	17.3	.	.	0.9	3.3	1.1	9.4	8.0	35.2	180.1	1017.1	10.5
	1980	31.6	30.4	6.6	.	0.7	1.0	3.0	4.6	6.2	37.6	266.0	968.6	11.8
DIABETES MELLITUS.....250	1990	17.1	.	.	.	1.0	.	.	6.4	18.4	49.6	118.8	262.3	7.6
	1989	20.8	.	2.2	.	.	2.5	3.3	14.1	27.0	64.9	138.0	264.0	11.1
	1980	12.2	.	.	.	1.5	1.9	3.0	4.6	15.5	37.6	83.1	201.4	6.6
SUICIDE.....E950-E959	1990	13.4	.	.	1.8	29.6	18.3	16.8	12.8	8.4	7.3	23.2	7.5	13.9
	1989	12.8	.	.	.	21.8	11.5	9.8	15.6	15.9	24.1	30.0	15.5	12.0
	1980	12.9	.	.	1.9	16.3	17.5	10.5	23.1	12.4	15.8	23.3	19.2	12.5
CHRONIC LIVER DISEASE AND	1990	7.3	.	.	.	.	1.8	7.4	17.6	21.7	12.9	26.1	15.0	6.2
CIRRHOSIS.....571	1989	10.2	.	.	.	.	4.1	14.1	26.6	15.9	31.5	27.0	15.5	9.1
	1980	11.0	7.6	.	.	0.7	4.9	16.6	41.6	24.8	19.8	10.0	19.2	11.4
ATHEROSCLEROSIS.....440	1990	8.0	.	.	.	.	.	.	.	.	3.7	43.5	292.3	1.7
	1989	8.8	.	.	.	.	.	.	1.6	1.6	7.4	48.0	318.3	2.4
	1980	16.8	.	.	.	.	.	.	.	6.2	15.8	116.4	661.7	5.1
NEPHRITIS, NEPHROTIC SYNDROME, AND	1990	7.2	10.4	.	.	1.0	0.9	.	6.4	1.7	12.9	34.8	172.4	3.1
NEPHROSIS.....580-589	1989	6.7	.	.	.	.	.	.	3.1	6.4	13.0	36.0	178.6	2.6
	1980	7.8	.	.	.	.	.	1.5	1.5	3.1	23.8	59.8	191.8	3.4
HOMICIDE AND LEGAL	1990	2.9	10.4	2.2	1.8	4.1	3.7	2.1	4.8	1.7	.	5.8	.	3.0
INTERVENTION.....E960-E978	1989	2.9	17.3	.	0.9	0.9	4.1	5.4	.	4.8	5.6	.	7.8	2.7
	1980	3.5	.	.	0.9	6.7	4.9	4.5	7.7	1.5	.	.	.	3.8
SEPTICEMIA.....038	1990	3.2	.	.	.	1.0	.	.	3.2	5.0	9.2	11.6	52.5	1.8
	1989	3.9	8.6	.	.	.	.	.	.	1.6	11.1	24.0	93.2	1.5
	1980	4.1	7.6	2.2	.	.	.	1.5	.	9.3	5.9	26.6	76.7	2.2
CERTAIN CONDITIONS ORIGINATING IN	1990	5.0	354.9	.	0.9	.	.	.	.	.	.	.	.	5.6
THE PERINATAL PERIOD....760-779	1989	5.0	302.3	2.2	.	.	.	.	.	.	.	.	.	4.8
	1980	7.8	410.4	.	.	.	.	.	.	.	.	.	.	6.3
CONGENITAL ANOMALIES.....740-759	1990	5.7	302.7	6.7	.	1.0	0.9	.	1.6	1.7	3.7	2.9	7.5	6.0
	1989	6.2	181.4	13.2	0.9	.	1.6	3.3	4.7	.	5.6	9.0	15.5	5.5
	1980	7.7	288.8	6.6	.	2.2	2.9	.	3.1	1.5	4.0	3.3	.	6.5

Note: The age-adjusted rates presented in this report were computed by the direct method, that is, by applying the age-specific death rates for a specific group or cause of death to the standard population distributed by age. The total population as enumerated in 1940 was selected as the standard. The age-adjusted rates were based on 10-year age groups. It is important not to compare age-adjusted death rates with crude rates.

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Induced Abortion

South Dakota Induced Abortions an Overview: 1990	
Total Induced Abortions in South Dakota (Occurrences)	946
Total Induced Abortions in South Dakota (Residents)	762

South Dakota Abortions

In 1990, 946 abortions were performed in South Dakota, of these 762 were South Dakota residents. South Dakota residents accounted for 80.5 percent of the abortions performed in the state. During 1989 and 1988, 82.8 percent and 86.9 percent respectively were performed on South Dakota residents. This reflects a slight declining trend over the last three years.

The majority of women (83.3 percent) who obtained induced abortions in 1990 had no previous abortions, 14.2 percent had one previous abortion, and the remaining women had obtained more than one previous abortion.

Patient's Age and Race

The largest number of women obtaining induced abortions were in the 20-24 age group, about 31 percent of the total abortions. This also holds true for South Dakota residents where the same age group obtained 247 abortions in the state, just over 32 percent of resident abortions.

Table 22 shows that 865 or 91 percent of the reported induced abortions performed in South Dakota were to white women. Last year white women represented 94 percent of the induced abortions performed in the state.

TABLE 21

INDUCED ABORTIONS IN SOUTH DAKOTA BY PATIENT'S STATE OF RESIDENCE AND AGE GROUP, 1990

	TOTAL	AGE OF PATIENT				
		0-19	20-24	25-29	30-34	35 & +
TOTAL						
NUMBER	946	260	295	169	128	94
PERCENT	100.0	27.5	31.2	17.9	13.5	9.9
STATE OF RESIDENCE						
SOUTH DAKOTA	762	206	247	135	105	69
IOWA	90	20	29	15	14	12
MINNESOTA	76	28	16	13	7	12
NEBRASKA	11	5	-	3	2	1
OTHER	7	1	3	3	-	-

Source: Center for Health Policy and Statistics, South Dakota Department of Health.

Table 22

Induced Abortions Occurring in South Dakota
by Age Group and Race of Patient, 1990

Patient's Age	Total	Patient's Race		
		White	Native American	Other
Total				
Number	946	865	51	30
Percent	100.0	91.4	5.4	3.2
00 - 19	260	248	9	3
20 - 24	295	271	14	10
25 - 29	169	146	14	9
30 - 34	128	112	10	6
35 - 39	72	68	4	-
40 & +	22	20	-	2

Table 23

South Dakota Induced Abortions by South Dakota Residents,
Age Group, and Race of Patient, 1990

Patient's Age	Total	Patient's Race		
		White	Native American	Other
Total				
Number	762	690	48	24
Percent	100.0	90.6	6.3	3.1
00 - 19	206	195	8	3
20 - 24	247	227	13	7
25 - 29	135	115	13	7
30 - 34	105	90	10	5
35 - 39	53	49	4	-
40 & +	16	14	-	2

Source: Center for Health Policy and Statistics,
South Dakota Department of Health.

Marriages and Divorces

South Dakota Marriages and Divorces an Overiew: 1990

Marriages:	
Number Occurring in S.D.	7,716
S.D. Rate per 1,000 Population	11.1
U.S. Rate per 1,000 Population(Provisional)	9.8
Age of Bride in South Dakota (Years)	
Mean	29
Median	26
Mode	22
Range	
Lower	13
Upper	84
Age of Groom in South Dakota (Years)	
Mean	31
Median	28
Mode	23
Range	
Lower	15
Upper	88
Divorces and Annulments:	
Number Occurring in S.D.	2,651
S.D. Rate per 1,000 Population	3.8
U.S. Rate per 1,000 Population(Provisional)	4.7
Years Married Before Termination in S.D.	
Mean	9
Median	6
Mode	2
Range	
Lower	Less than 1
Upper	60

Source: Center for Health Policy and Statistics,
South Dakota Department of Health.

Table 24

Marriages and Marriage Rates by Occurrence
South Dakota and United States
1960-1990

Year	United States		South Dakota	
	Number	Crude Rate	Number	Crude Rate
*1990	2,448,000	9.8	7,716	11.1
*1989	2,404,000	9.7	7,108	10.0
1988	2,395,926	9.7	7,328	10.3
1987	2,403,378	9.9	6,996	9.9
1986	2,407,099	10.0	7,386	10.4
1985	2,412,625	10.1	7,793	11.0
1984	2,477,192	10.5	8,057	11.5
1983	2,445,604	10.5	8,013	11.5
1982	2,456,278	10.6	8,353	12.1
1981	2,422,145	10.5	8,662	12.5
1980	2,390,252	10.5	8,800	12.7
1979	2,331,337	10.4	8,978	13.0
1978	2,282,272	10.3	10,638	15.4
1977	2,178,367	9.9	10,359	15.1
1976	2,154,807	9.9	10,781	15.7
1975	2,152,662	10.0	11,074	16.3
1974	2,229,667	10.4	11,928	17.5
1973	2,284,108	10.8	12,291	18.0
1972	2,282,154	10.9	12,151	17.9
1971	2,190,481	10.5	11,363	16.9
1970	2,158,802	10.5	11,034	16.9
1969	2,145,000	10.6	10,909	16.3
1968	2,069,000	10.4	10,347	15.5
1967	1,927,000	9.7	9,051	13.5
1966	1,857,000	9.5	8,517	12.5
1965	1,800,000	9.3	8,317	12.0
1964	1,725,000	9.0	8,055	11.5
1963	1,654,000	8.8	7,470	10.6
1962	1,577,000	8.5	6,954	9.9
1961	1,548,000	8.4	6,213	9.0
1960	1,523,000	8.5	5,789	8.5

*U.S. data are provisional

Source: National Center for Health Statistics, Hyattsville, Maryland 20782 and Center for Health Policy and Statistics, South Dakota Department of Health.

Marriages in South Dakota

Marriage rates in South Dakota reached their peak in 1973 at 18 marriages per 1,000 population. The South Dakota rate did show an 11 percent increase from 1989 to 1990. This is unlike the United States marriage rate which held fairly stable at about 10 marriages per 1,000 population throughout the 70's and 80's. Table 24 provides the United States and South Dakota marriage rates from 1960 through 1990.

The mean or average age of bride in 1990 was 29 years of age while the median age was 26. The ages of the brides in 1990 ranged from a low of 13 to a high of 84.

Grooms ranged in age from 15 years old to 88 years old. The mean or average age of groom was 31, and the median age was 28 in South Dakota for 1990.

The age of bride most repeated in 1990 was 22 and the most repeated age of groom was 23 years of age.

Figure 4

Marriages Occurring in South Dakota and United States 1960 - 1990

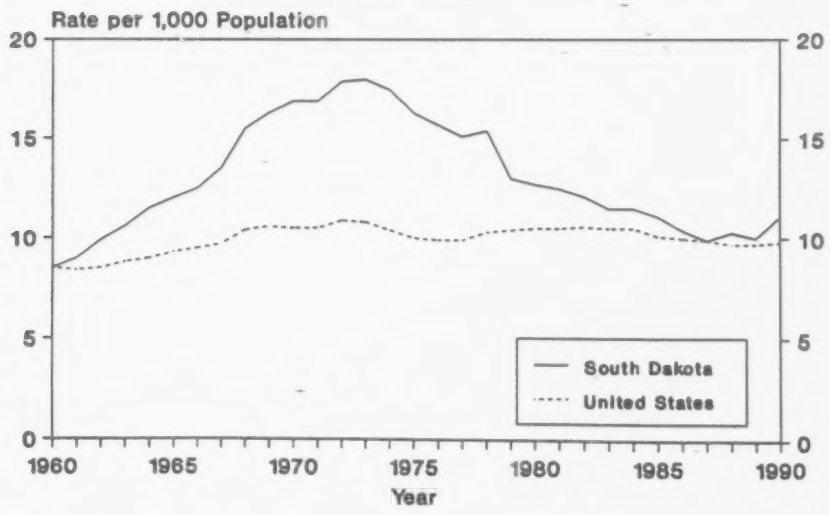


Table 25

Number and Rates of Divorces and Annulments by Occurrence,
South Dakota and United States
1960-1990

Year	United States		South Dakota	
	Number	Crude Rate	Number	Crude Rate
*1990	1,175,000	4.7	2,651	3.8
*1989	1,163,000	4.7	2,624	3.7
1988	1,167,000	4.7	2,649	3.7
1987	1,166,000	4.8	2,696	3.8
1986	1,178,000	4.9	2,585	3.6
1985	1,190,000	5.0	2,566	3.6
1984	1,169,000	5.0	2,498	3.6
1983	1,158,000	4.9	2,556	3.7
1982	1,170,000	5.0	2,564	3.7
1981	1,213,000	5.3	2,772	4.0
1980	1,189,000	5.2	2,811	4.1
1979	1,181,000	5.2	2,665	3.9
1978	1,130,000	5.1	2,449	3.5
1977	1,091,000	5.0	2,436	3.5
1976	1,083,000	5.0	2,352	3.4
1975	1,036,000	4.8	2,232	3.3
1974	977,000	4.6	2,015	3.0
1973	915,000	4.3	1,802	2.6
1972	845,000	4.0	1,632	2.4
1971	773,000	3.7	1,408	2.1
1970	708,000	3.5	1,357	2.0
1969	639,000	3.2	1,255	1.9
1968	584,000	2.9	1,243	1.9
1967	523,000	2.6	1,090	1.6
1966	499,000	2.5	949	1.4
1965	479,000	2.5	1,015	1.5
1964	450,000	2.4	951	1.4
1963	428,000	2.3	953	1.3
1962	413,000	2.2	871	1.2
1961	414,000	2.3	881	1.3
1960	393,000	2.2	806	1.2

*U.S. data are provisional

Source: National Center for Health Statistics, Hyattsville, Maryland 20782 and Center for Health Policy and Statistics, South Dakota Department of Health.

Divorces in South Dakota

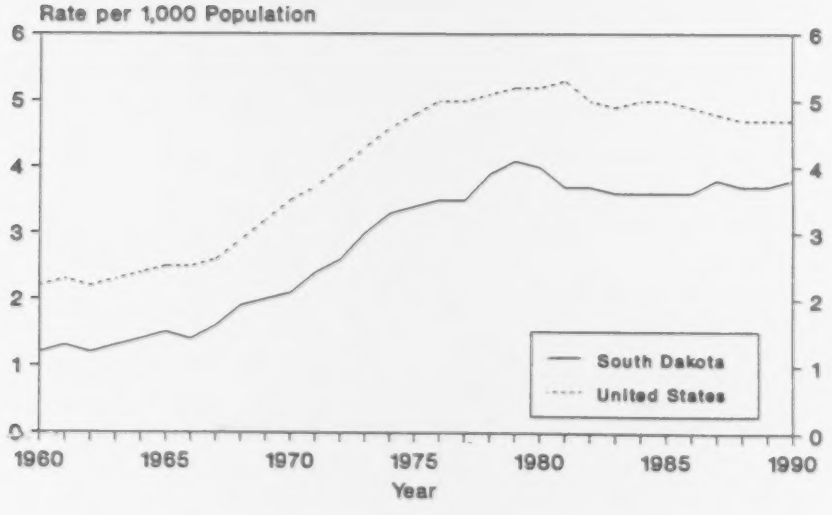
The divorce rate for South Dakota has held fairly stable since the mid seventies while the national rate tends to be about one divorce per 1,000 population more than the state rate.

The mean or average length of marriage before termination in South Dakota in 1990 was 9 years. The median duration of marriage before termination was 6 years.

The length of time married before terminating ranges from less than one year to sixty years in South Dakota for 1990.

Figure 5

Divorces Occurring in
South Dakota and United States
1960 - 1990



Communicable Diseases

COMMUNICABLE DISEASE SURVEILLANCE

The South Dakota State Department of Health is authorized by SDCL 34-22-12 to collect and process mandatory reports of communicable diseases from physicians, hospitals, laboratories, and institutions. This includes designating certain diseases as reportable as well as establishing the mechanics for reporting communicable diseases and the use of public health measures for control purposes.

Alphabetic List of Notifiable Diseases

AIDS (Acquired Immunodeficiency Syndrome)
. Human Immunodeficiency Virus (HIV) infection (seropositive ELISA and Western blot)
. AIDS-related conditions (ARC)
. Clinical AIDS
Anthrax
Botulism
. Foodborne
. Infant
. Other
Brucellosis
Campylobacteriosis
*Chickenpox
Cholera
Dengue
Diphtheria
Encephalitis
. Primary
. Post-infectious
Giardiasis
Haemophilus influenzae type b infections:
. Meningitis
. Other invasive disease
Hepatitis (viral):
. A (infectious)
. B (serum)
. non-A, non-B
. Unspecified
Herpesvirus infection (neonatal)
*Influenza or influenza-like illness
Legionellosis
Leprosy
Leptospirosis
Listeriosis
Lyme disease
Malaria
Measles
Meningococcal infections
Meningitis
. Aseptic
. Bacterial
Mumps
Pertussis
Plague
Poliomyelitis
. Paralytic
. Nonparalytic
. Unspecified
Psittacosis
Rabies:
. In animals
. In humans
Rheumatic fever (acute)
Rocky Mountain spotted fever
Rubella
Rubella, congenital syndrome
Salmonellosis
Scarlet fever
Sexually Transmitted Diseases Diseases
. Chancroid
. Chlamydial infections
. Gonorrhea
. Granuloma inguinale
. Lymphogranuloma venereum
. Syphilis
Shigellosis
*Streptococcal pharyngitis
Tetanus
Toxic shock syndrome
Trichinosis
Tuberculosis
Tularemia
Typhoid fever
Typhus fever
Yellow Fever

PLEASE NOTE: Underlined - Conditions with potential for epidemic spread or which require rapid action: Immediate telephone report required.

. * Report by number of cases only.

Additional Reporting

In addition to the above list of diseases, reports of the following occurrences are requested:

1. Disease occurrences of unusual significance, incidence, or concentration (nosocomial outbreaks, epidemic acute URI or diarrheal disease, rash illness, etc.) which may merit epidemiological evaluation.

2. Foodborne and waterborne outbreaks - suspected common source outbreaks characterized by gastrointestinal symptoms.

3. Related occurrences for which expanded national surveillance has been established:

   A. Reye syndrome
   B. Guillain-Barre' syndrome (only cases occurring within 8 weeks following administration of any vaccination)
   C. Kawasaki disease
   D. Herpes simplex (genital)
   E. Adverse reactions to vaccination (reactions serious enough to require a visit to a physician or hospitalization within 4 weeks after vaccination).

VACCINE-PREVENTABLE DISEASES

Remarkable accomplishments have been made in reducing vaccine-preventable disease morbidity and mortality during the past 20 years. Factors contributing to disease reduction during this period include enacting a statewide school immunization law in 1971; implementing child-care facility immunization standards; providing new vaccines in public clinics (measles vaccine distribution began in 1967, rubella in 1969, mumps in 1976 and *Haemophilus influenzae* b in 1989); and, since 1978, providing adequate free supplies of all childhood vaccines for private and public clinic use.

South Dakota recorded the first measles outbreaks in ten years during April and May of 1990. This resurgence of measles in South Dakota reflects what is emerging nationally as a significant vaccine preventable disease problem. In recent years, large outbreaks of measles have occurred in preschool-age unvaccinated children. This observation indicates a failure to implement the single dose vaccination strategy. In addition, substantial numbers of cases have occurred in persons who had been appropriately vaccinated after the first birthday. Such cases have predominantly occurred in adolescents and young adults, particularly in college settings. These cases likely represent vaccine failures. Vaccine failures may be either primary, i.e., an adequate immune response never developed or secondary, i.e., an adequate immune response developed initially but waned over time.

Measles immunization policies across the U.S. are being modified in an attempy to reach the goal of eliminating indigenous measles in this country. Aggressive strategies to first time immunize with measles containing vaccine (MMR) and recommend a second dose of MMR to all persons born in or after 1957 are being used to address the resurgence of measles. In response to that, in April of 1990 the South Dakota Department of Health convened a work group representing the Department, Pediatricians, Family Physicians, Indian Health Services, the USD School of Medicine, and the Centers for Disease Control

to review current national recommendations to adopt a measles immunization policy as part of a long term measles elimination plan for South Dakota. The following is a summarization of the recommendations made by that group:

RECOMMENDATIONS FOR FIRST DOSE OF MEASLES-CONTAINING VACCINE

All children should receive the first dose of measles vaccine as MMR at 15 months of age. This is still the first line of defense and should provide immunity to 95% of those vaccinated.

RECOMMENDATIONS FOR SECOND DOSE OF MEASLES-CONTAINING VACCINE

All children should receive a second dose of measles vaccine as MMR at 4-6 years of age (entry to kindergarten or first grade). Post-secondary educational institutions should adopt policies to require that entering students have evidence of two doses of live measles-containing vaccine, or other evidence of measles immunity.

There were no cases of rubella reported in South Dakota during 1990. Rubella is a common childhood rash disease that is often overlooked or misdiagnosed. By far, the most important consequences of rubella are the fetal deaths and anomalies that frequently result from rubella infection in early pregnancy. Preventing infection of the fetus and consequently, congenital rubella syndrome are major objectives of rubella immunization programs. Rubella morbidity in South Dakota has also been significantly affected by measles elimination activities since immunization programs generally have utilized a combined measles-mumps-rubella vaccine. One delayed case of congenital rubella syndrome that occurred in 1978 was reported in South Dakota in 1983, the first since 1974.

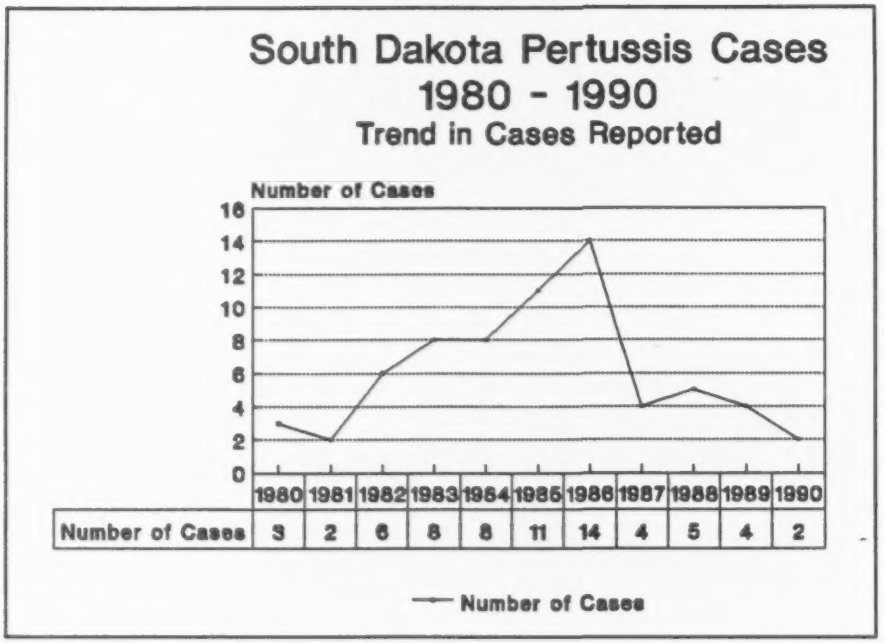
There were also no cases of tetanus, diphtheria or polio during 1990. South Dakota has been polio-free since 1964.

In 1986, after 15 years of continuous decline in the reported incidence of mumps in the United States, there was an increase in reported cases. In 1987, a fourfold increase over 1986 was observed. This pattern is in keeping with the history of immunization in the United States. It was not until 1977 that the Immunization Practices Advisory Committee (ACIP) first began to recommend routine use of mumps vaccine for children 12 months of age or older. A more aggressive approach to the vaccination of susceptible older children and young adults was not advocated until 1980.

With the gradual accumulation and increasing age of the pool of susceptibles, outbreaks are extending beyond secondary schools into colleges and even the workplace. Mumps is becoming a disease of adults instead of children. In 1987, eighty-nine cases of mumps were reported from college campus outbreaks in South Dakota. Aggressive immunization policies were implemented at the college entry level and have had a significant impact on incidence of mumps. One case was reported in 1988 and no cases in 1989 or 1990.

During 1990, 2 cases of pertussis were reported in South Dakota. Complications of pertussis include pneumonia, otitis media, atelectasis, emphysema, bronchiectasis, convulsions and brain damage. Death occurs in one percent or less of infections. The disease is most severe in young infants; 70 percent of all deaths occur during the first year of life. The efficacy of the current pertussis vaccine and its generalized use have resulted in remarkable reductions in pertussis morbidity. As reflected in Figure 6, pertussis is reported sporadically each year with an occasional outbreak. In 1986 a small outbreak was investigated, the first since 1976.

FIGURE 6



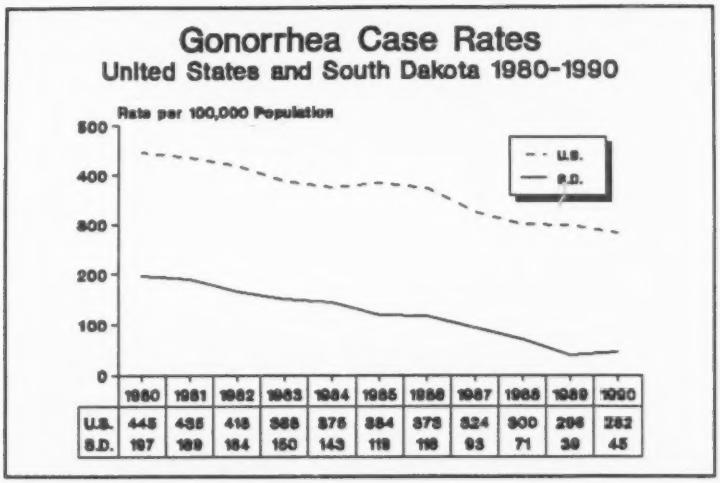
SEXUALLY TRANSMITTED DISEASES

Gonorrhea

In South Dakota, gonorrhea ranks second among reportable sexually transmitted diseases. The number of cases of gonorrhea reported in South Dakota increased slightly from 280 in 1989 to 318 in 1990. The 1990 incidence still reflects the general declining trend of reported gonorrhea in South Dakota observed since 1977, when 1,656 cases were reported. During this same time period, the number of cases reported annually in the United States has declined less dramatically.

South Dakota's 1990 gonorrhea case rate was 45.0 per 100,000 population, which is considerably less than that of the national case rate of 282.0. (see Figure 7) South Dakota's gonorrhea incidence is at a level where domestic eradication is achievable (defined as 50 cases per 100,000 population with half the cases having an out-of-state source of infection or being within one generation of an out-of-state source). The plan addresses such areas of gonorrhea control as disease intervention, clinician training, disease reporting, and STD education.

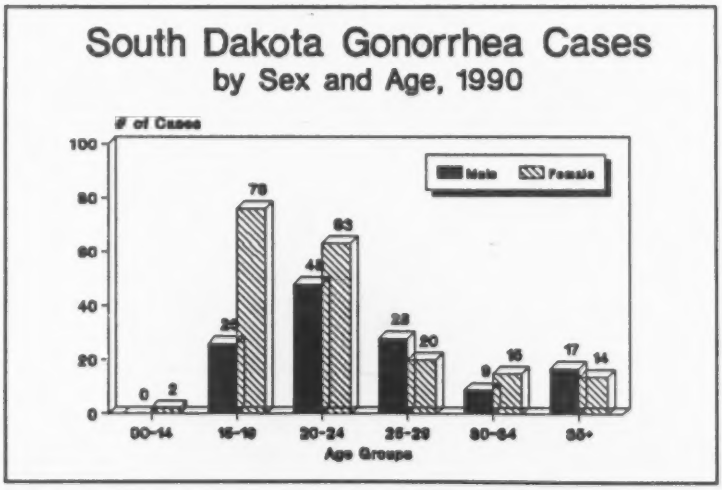
FIGURE 7



	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
U.S.	445	436	418	388	375	384	373	324	300	296	282
S.D.	197	189	184	150	143	119	119	93	71	39	45

The incidence of gonorrhea has generally been in the sexually active age groups, with a peak among 15-24 year-olds of both sexes. Nationally, gonorrhea rates among males and females are approximately the same with the rate among males being slightly higher than among females. This is primarily due to the fact that males are more often symptomatic and therefore more apt to voluntarily seek treatment. In South Dakota we see a reverse of this trend, the rate among females is higher than the rate among males. The exact reason for this discrepency is unknown, but it has been suggested that it may be due to a lack of readily available affordable diagnostic and treatment services for males.

FIGURE 8



South Dakota's American Indian population contributes a disproportionate amount to the state's reported cases of gonorrhea - nearly one-half the annual reported morbidity. As reflected in Table 26, the gonorrhea case rate among Native Americans still surpasses that of the general population. Although there are unique problems which make it difficult to conduct effective gonorrhea control programs on Indian Reservations, a steady declining trend has been the result of aggressive intervention activities.

Table 26

South Dakota Gonorrhea Case Rates per 100,000 Population
by Race 1984-1990

Year	American Indian	Other Races	All Races
1984	902.7	95.0	142.9
1985	751.0	73.3	119.3
1986	704.8	72.7	115.5
1987	677.4	51.0	93.4
1988	517.0	38.0	70.8
1989	278.4	22.1	39.3
1990	346.0	22.2	45.0

In 1981, the first case of penicillinase-producing *Neisseria gonorrhoeae* (PPNG) was reported in South Dakota. This strain of gonorrhea, which is resistant to treatment with penicillin, is viewed as a serious threat to gonorrhea control programs throughout the United States. During 1990 two PPNG cases were reported in South Dakota.

Syphilis

Seven cases of early, infectious syphilis (primary, secondary, and early latent of less than one year's duration) were reported in South Dakota during 1990. Epidemiological evidence supports the assumption that South Dakota is free of indigenously acquired or transmitted syphilis. Accordingly, the occurrence of an early syphilis case in South Dakota is considered a public health emergency by the South Dakota Department of Health, and it receives immediate epidemiological action.

Chlamydia

A surveillance program for the identification of chlamydial infections was instituted in 1987. A major objective of the STD Program is to incorporate chlamydia into the realm of sexually transmitted disease (STD) prevention and control. Chlamydia has been recognized nationally as a leading cause of pelvic inflammatory disease and fertility problems in young women. Nationwide chlamydia incidence is estimated to be at least twice that of gonorrhea.

Chlamydia is by far the most common sexually transmitted disease in South Dakota. Testing for chlamydia infection first became available to clinicians in 1985 with the introduction of direct antigen testing. Since 1986 chlamydia screening has been performed among sexually active women in state family planning clinics and Indian Health Service facilities. These facilities continue to report the majority of the state's chlamydia infections. Chlamydia screening and diagnostic testing is slowly becoming more popular with other state health care providers. Infections due to *Chlamydia trachomatis* first became reportable to the Department of Health in January of 1988. The Communicable Disease

Program estimates the current chlamydia case rate to be approximately 600 per 100,000 state residents, 12 times the current gonorrhea rate. Table 27 depicts chlamydia morbidity for the past 6 years and reflects the results of screening activities in South Dakota since testing has become available.

Table 27

Chlamydia Infections Reported to the Department of Health
by Sex
South Dakota 1985 - 1990

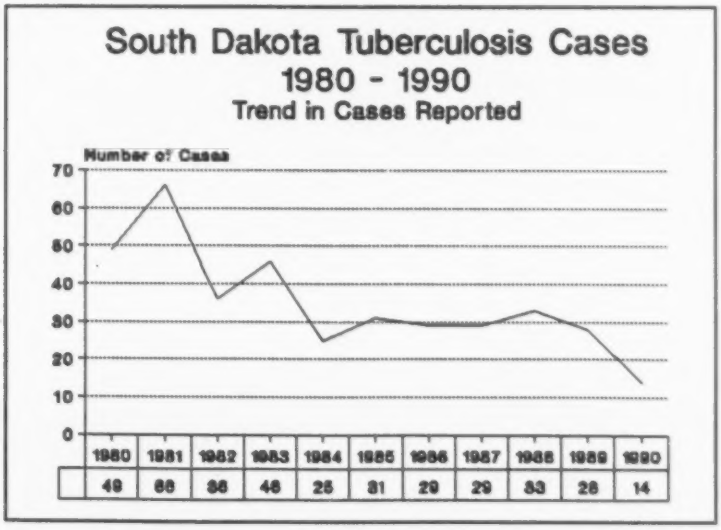
Sex	1985*	1986*	1987*	1988	1989	1990
Male	25	174	294	375	339	443
Female	210	1505	2002	1978	1925	2054
Total	235	1679	2296	2353	2264	2497

* voluntary disease reports

TUBERCULOSIS

During calendar year 1990 a total of 14 cases of active tuberculosis was reported to the South Dakota Department of Health. Reported tuberculosis cases over the past decade represent a significantly declining trend in incidence as illustrated in Figure 9.

FIGURE 9



The remaining challenge to eliminate tuberculosis in South Dakota rests with solving the problems of disease activation among the elderly and the American Indian population. Table 28 is a comparison of tuberculosis case rates for the nation and for South Dakota in 1990.

Table 28

Tuberculosis Case Rates per 100,000 Population 1990

Place and/or Race	:	Case Rate
United States		10.3
South Dakota		1.9
American Indian		22.1
All other Races		.5

With increasing age persons previously infected with tuberculosis are at high risk for developing active disease. Some risk factors include the aging immune system and underlying chronic health problems such as diabetes, heart or lung disease. Figure 10 shows tuberculosis incidence by race for 1990, and Figure 11 reflects the incidence of tuberculosis by age and sex. These are the groups targeted for future tuberculosis elimination activities.

FIGURE 10

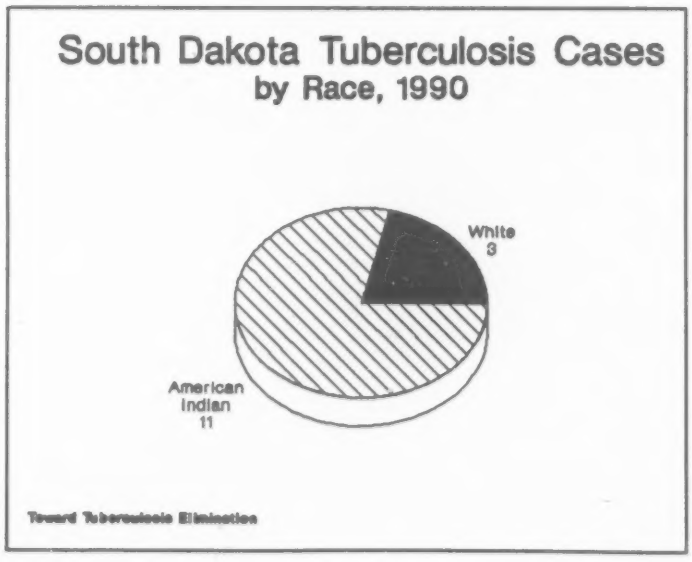
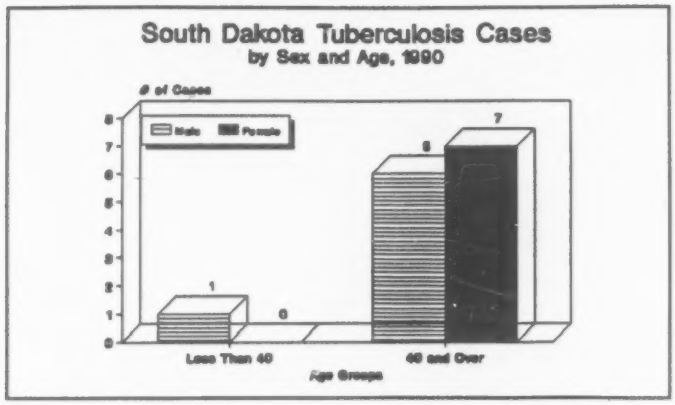


FIGURE 11



A matter of concern in South Dakota as well as at the national level is the occurrence of tuberculosis in young children (under five years of age). Each such case represents a failure to interrupt transmission of infection from a case of tuberculosis and a failure to prevent, through drug prophylaxis, the emergence of disease in such an infected child. In 1990 there was one new tuberculosis case among children in this age group.

AIDS/HIV

Acquired Immunodeficiency Syndrome (AIDS) is a disease caused by the Human Immunodeficiency Virus (HIV) that damages the immune system and destroys the body's ability to fight off illness. The syndrome was first described in 1981 and by the end of 1990, 161,073 cases nationally had been reported to the Centers for Disease Control in Atlanta, Georgia.

AIDS has been a reportable disease in South Dakota since 1985, and HIV infection has been reportable since 1988. Figures 12 and 13 reflect AIDS and HIV infection incidence information available since 1985.

FIGURE 12

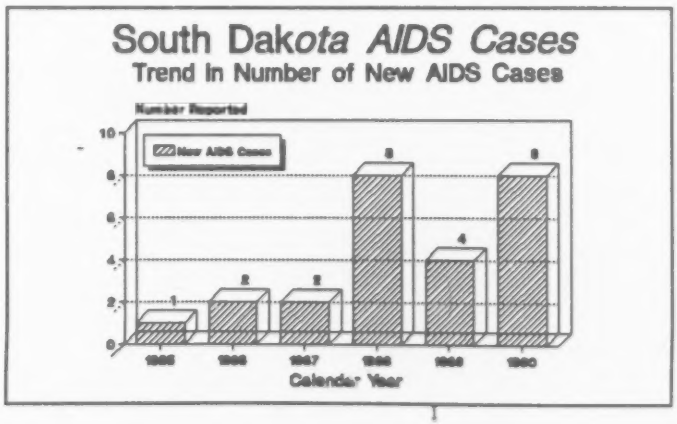
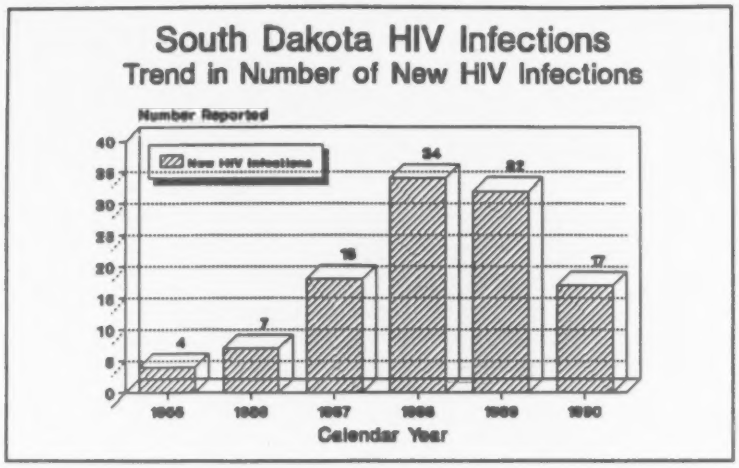


FIGURE 13



AIDS first appeared in the United States in the male homosexual and intravenous drug user communities and continues to be concentrated in high risk persons. Tables 29 and 30 illustrate the distribution of cumulative AIDS cases and HIV infections by transmission category in South Dakota.

Table 29

South Dakota AIDS Cases Transmission Category
1985-1990 Cumulative

Transmission Categories	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Homosexual/Bisexual	15	60	-	-	15	60
I.V. Drug Abuse	-	-	1	4	1	4
Homosexual/Bi. & I.V. Drugs	2	8	-	-	2	8
Hemophilia	4	16	-	-	4	16
Heterosexual	1	4	-	-	1	4
Transfusion, Blood	-	-	-	-	-	-
Child of HIV+ Mother	-	-	-	-	-	-
Undetermined (denies risk)	2	8	-	-	2	8
Total	24	96	1	4	25	100

Table 30

South Dakota HIV Cases Transmission Category
1985-1990 Cumulative

Transmission Categories	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Homosexual/Bisexual	58	50	-	-	58	50
I.V. Drug Abuse	11	10	9	8	20	17
Homosexual/Bi. & I.V. Drugs	7	6	-	-	7	6
Hemophilia	15	13	-	-	15	13
Heterosexual	5	4	4	3	9	8
Transfusion, Blood	1	1	-	-	1	1
Child of HIV+ Mother	-	-	2	2	2	2
Undetermined (denies risk)	3	3	-	-	3	3
Total	100	87	15	13	115	100

NOTE: 12 HIV(+)s reported prior to 1988 were not investigated - transmission catergories are unknown.

Table 31

SELECTED MORBIDITY REPORT, SOUTH DAKOTA, 1990

SELECTED NOTIFIABLE DISEASE	1990	5 YEAR MEDIAN
VACCINE PREVENTABLE		
Diphtheria	0	0
Tetanus	0	0
Pertussis	2	4
Poliomyelitis	0	0
Measles	23	0
Mumps	0	1
Rubella	0	0
BLOOD-BORNE/SEXUALLY TRANSMITTED DISEASES		
AIDS	8	2
HIV Infection	17	NA
Hepatitis B	8	11
Chlamydia	2497	NA
Gonorrhea	318	659
Syphilis Infections	7	13
TUBERCULOSIS		
Class III - Disease		
Pulmonary	9	21
Non-pulmonary	5	10
Class II - Infection	1021	653
INVASIVE BACTERIAL		
Haemophilus influenzae		
Meningitis	24	31
Infection	30	NA
Neisseria meningitidis		
Meningitis	2	4
Septicemia	1	3
ENTERIC DISEASES		
Campylobacteriosis	39	55
Giardiasis	127	261
Salmonellosis	87	109
Shigellosis	81	87
Hepatitis A	493	30
VECTORBORNE DISEASE		
Rocky Mt. Spotted Fever	2	4
Encephalitis	0	0
Tularemia	4	8
Animal Rabies	209	192
OTHER		
Aseptic Meningitis	11	26
Legionellosis	3	14
Lyme Disease	2	2

Technical Notes

TECHNICAL NOTES

A. SOURCES OF DATA

Vital Events

Birth and death certificates, reports of fetal deaths, and induced abortion reports were the source documents for data on vital events of South Dakota during the 1990 calendar year. A copy of each of these types of certificates is included in the Samples of Data Collection Section. Marriage and divorce data were compiled from transcripts which were received from each county. Copies of a marriage certificate and of the record of divorce are also included in the sample of Data Collection section.

The cut-off date for 1990 data in this report was April 15, 1991. Any data pertaining to a 1990 event for which a certificate was filed after April 15, 1991 were not included in this report. The number of records received after that date was so small that in most instances, it is of little significance for the purpose of analysis.

Events relating to South Dakota residents which occurred in another state were included in this report. The inclusion of these data are made possible by an agreement among all registration areas in the United States for resident exchange of copies of certificates.

Birth and fetal death records are the responsibility of the person in attendance, however, the records are usually completed by medical records personnel who are not necessarily present at the delivery. Death records are the responsibility of the funeral director. These records are seldom completed by hospital personnel or physicians, although the medical certification is completed by a physician or coroner.

United States data were obtained from publications produced by the Department of Health and Human Services, Public Health Services, Centers for Disease Ccontrol, National Centers for Health Statistics, Hyattsville, Maryland.

Population

The April 1, 1990 Census was used to develop the rates in this publication.

B. DATA DELIMITATIONS

Quality

The quality of data presented in this report is directly related to the completeness and accuracy of the information contained on the certificates.

Medical Certification

Causes of death on death certificates are coded according to the ninth revision of the International Classification of Disease (ICD). This classification is adopted by the World Health Organization and is used throughout the world for selecting the underlying cause of death and classifying the cause.

Race

The race reported on the vital records reflects the opinion of the informant and does not follow any prescribed rules for the reporting of race. This report shows tabulations for white, Indian, and other. Persons classified as other are few in South Dakota and tabulations reflecting these events are not statistically significant.

Birth data were tabulated using the race of the mother. No attempt is made to determine the race of the child from the race shown for the father and the mother.

C. GEOGRAPHIC ALLOCATION

In South Dakota, registration of vital events is classified geographically in two ways. The first way is by place of occurrence, i.e., the actual state and county in which the birth or death took place. The second, and more customary way is by place of residence, i.e., the state or county stated to be the usual residence of the decedent in the case of deaths or of the mother in the case of a newborn.

Fetal deaths and infant deaths, in cases where the child was never discharged from the hospital, are classified to the residence of the mother.

Occurrence statistics have administrative value and statistical significance, especially when calculating accident statistics. Residence statistics are useful in determining health indices for planning and evaluation purposes. The statistics provided in this report are residence data unless otherwise stated.

Allocation of vital events by place of residence is sometimes difficult, because classification depends entirely on the statement of the usual place of residence furnished by the informant at the time the original certificate is completed. For various reasons, this statement may be incorrect or incomplete. For example, mailing addresses very often differ from the actual geographic residence.

D. DEFINITIONS

Abortion - The termination of human pregnancy with an intention other than to produce a live birth or to remove a dead fetus.

Age-Adjusted Death Rate (Direct Method) - Age-specific death rates for a selected population are applied to a standard population in order to calculate what rate would be expected if the selected population had the same age distribution as the standard. The total of expected deaths divided by the total of the standard population and multiplied by 1,000 (or 100,000 for cause-specific rates) yields the age-adjusted death rate per 1,000 or 100,000. (It is important to use the same standard population in the computation of each age-adjusted rate to achieve comparability. Age-adjusted death rates should never be compared with any other types of death rate or be used as absolute measurements of mortality.)

Age-Specific Birth Rate - Number of live births to women in specific age group per 1,000 female population in that age group.

Age-Specific Death Rate - Number of deaths in a specific age group per 100,000 population in that age group.

Birth Weight - The first weight of the fetus or newborn obtained after birth. This weight should be measured preferably within the first hour of delivery before significant postnatal weight loss has occurred.

Crude Birth Rate - The number of resident live births divided by the total resident population X 1,000.

Crude Death Rate - The number of resident deaths divided by the total resident population X 1,000.

Cause Specific Death Rate - The number of resident deaths due to a specific cause divided by the total resident population X 100,000.

Fetal Death - Death prior to the complete expulsion or extraction from its mother of a product of human conception irrespective of the duration of pregnancy, as indicated by the fact that after such expulsion or extraction the fetus does not show evidence of life. (South Dakota requires the reporting of any fetus weighing over 500 grams).

Fetal Death Rate - The number of fetal deaths divided by the total number of live births and fetal deaths X 1,000.

Infant Death - Death of a live born infant less than one year (365 days) of age. Infant deaths equal the sum of neonatal plus post neonatal deaths.

Infant Death Rate - The number of infant deaths divided by the total number of live births X 1,000.

Live Birth - The complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy, which, after separation, shows evidence of life.

Low Birth Weight - A birth weight under 2500 grams or 5 pounds, 9 ounces.

Mean - The arithmetic average of a set of values or the sum of all the values divided by the number of values in the group.

Median - The value or number that divides a population into two equal halves. The value that falls exactly in the middle of the entire range of values ranked in order from low to high such that 50% of the values fall above it and 50% fall below it. If the number of values is even, a value halfway between the two values nearest the middle is used.

Mode - The most frequently occurring value in a distribution.

Neonatal Death Rate - (Neonatal Death = Death occurring to infants 1-27 days old). The number of neonatal deaths divided by the total number of live births X 1,000.

Occurrence, Place of - Data allocated by place where the event occurred, irrespective of the person's place of residence.

Postneonatal Death Rate - (Postneonatal Death = Death occurring to infants 28 days to 1 year of age). The number of postneonatal deaths divided by the total number of live births X 1,000.

Perinatal Period - Completion of 28 weeks of gestation and variously defined as ending 1 to 4 weeks after birth.

Residence, Place of - Date allocated by place of residence, irrespective of where the event occurred.

Appendix

APPENDIX

BIRTH WEIGHT IN GRAMS

In order to provide data comparable to that published for the United States and other countries, birth weight is reported in grams for this report. The equivalents of the gram intervals in pounds and ounces are as follows:

499 grams or less	=	1 lb.	1 oz. or less			
500 - 999 grams	=	1 lb.	2 ozs.	-	2 lbs.	3 ozs.
1,000 - 1,499 grams	=	2 lbs.	4 ozs.	-	3 lbs.	4 ozs.
1,500 - 1,999 grams	=	3 lbs.	5 ozs.	-	4 lbs.	6 ozs.
2,000 - 2,499 grams	=	4 lbs.	7 ozs.	-	5 lbs.	8 ozs.
2,500 - 2,999 grams	=	5 lbs.	9 ozs.	-	6 lbs.	9 ozs.
3,000 - 3,499 grams	=	6 lbs.	10 ozs.	-	7 lbs.	11 ozs.
3,500 - 3,999 grams	=	7 lbs.	12 ozs.	-	8 lbs.	12 ozs.
4,000 - 4,499 grams	=	8 lbs.	13 ozs.	-	9 lbs.	14 ozs.
4,500 - 4,999 grams	=	9 lbs.	15 ozs.	-	11 lbs.	0 ozs.
5,000 grams or more	=	11 lbs.	1 oz. or more			

RATES

Absolute counts of births and deaths do not readily lend themselves to analysis and comparison between years and various geographic areas because of population differences. These demographic differences include total number, age and sex distributions, and ethnic or racial differentials. In order to assess the health status of a particular population at a specified time, the absolute number of events is converted to a relative number such as probability of living or dying, a rate, a ratio, or an index. This conversion is made by relating the crude number of events to the living population at risk in a particular area at a specified time.

1. Reliability of Rates:

   Precautions should always be taken when comparing any rates on vital events, especially crude rates. Both the size of the numbers and the characteristics of the population are important indicators of a rate's actual value.

   All statistics are subject to chance variation. Rates based on an unusually small or large number of events over a specified period of time or for a sparsely populated geographic area should be particular caution and concern.

   As an example of this problem, let us look at infant deaths as reported in 1987 and 1988 for residents of Meade County. There were 3 infant deaths in Meade County in 1987 which gave the County an infant mortality rate of 8.7 per 1,000 resident live births. However, in 1988, there were 5 infant deaths in Meade County. This resulted in an infant mortality rate of 15.1, an increase of over 80 percent. This is the chance result of a few deaths having enormous significance when applied to the relatively small number of births in Meade County. Any statement regarding the unusually high infant death rate in Meade County or the incredible increase in rates between 1987 and 1988 could be quite misleading. When small numbers of events or populations are evident in calculating/studying rates, multiple year rates (usually 5 or 10 year summary rates) will often provide a much better framework for the measurement of an outcome. For instance, if you calculate the running ten-year average infant

death rates for Meade County which end with the years 1987 and 1988, you will get an infant mortality rate of 8.1 for the period 1978-1987 and a rate of 8.4 for the period of 1979-1988. If these rates are compared to South Dakota's crude infant mortality rate, it can be seen that Meade County has a lower infant mortality rate than the State. In addition, the increase in rates from 8.1 to 8.4 (3.7 percent) is a much more realistic indicator of what is actually occurring in Meade County.

There are many characteristics of a population that can also render a crude rate of little use. Any unique demographic factors such as those related to age, sex, or race are not accounted for in crude rates. Since mortality varies greatly by age, crude death comparisons between the United States and South Dakota could be very misleading. Age adjusted and specific rates offer a more refined measurement with which to compare vital event experiences over geographic areas or time periods.

Table A-1
SOUTH DAKOTA RESIDENT VITAL STATISTICS BY COUNTY, 1990

RESIDENCE	BIRTHS		DEATHS		INFANT DEATHS		FETAL DEATHS		MARRIAGES		DIVORCES	
	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE	NUMBER	RATE
SOUTH DAKOTA	10,987	15.8	6,320	9.1	111	10.1	64	5.8	7,716	11.1	2,651	3.8
COUNTY												
AURORA	32	10.2	49	15.6	-	0.0	-	0.0	23	7.3	5	1.6
BEADLE	246	13.5	218	11.9	3	12.2	2	8.1	124	6.8	109	6.0
BENNETT	75	23.4	32	10.0	-	0.0	-	0.0	34	10.6	5	1.6
BON HOMME	90	12.7	72	10.2	-	0.0	-	0.0	62	8.7	28	3.9
BROOKINGS	324	12.9	164	6.5	1	3.1	-	0.0	232	9.2	108	4.3
BROWN	450	12.7	334	9.4	4	8.9	2	4.4	321	9.0	145	4.1
BRULE	90	16.4	47	8.6	-	0.0	-	0.0	63	11.5	11	2.0
BUFFALO	42	23.9	10	5.7	1	23.8	1	23.8	7	4.0	1	0.6
BUTTE	111	14.0	85	10.7	-	0.0	-	0.0	88	11.1	29	3.7
CAMPBELL	22	11.2	20	10.2	-	0.0	-	0.0	7	3.6	3	1.5
CHARLES MIX	162	17.7	101	11.1	3	18.5	-	0.0	84	9.2	19	2.1
CLARK	53	12.0	54	12.3	-	0.0	1	18.9	29	6.6	7	1.6
CLAY	137	10.4	104	7.9	3	21.9	-	0.0	92	7.0	42	3.2
CODINGTON	340	15.0	186	8.2	-	0.0	1	2.9	383	16.9	121	5.3
CORSON	83	19.8	36	8.6	2	24.1	2	24.1	38	9.1	6	1.4
CUSTER	65	10.5	77	12.5	4	61.5	2	30.8	91	14.7	34	5.5
DAVISON	254	14.5	197	11.3	1	3.9	-	0.0	175	10.0	66	3.8
DAY	86	12.3	99	14.2	1	11.6	-	0.0	43	6.2	19	2.7
DEUEL	64	14.2	50	11.1	-	0.0	1	15.6	47	10.4	9	2.0
DEWEY	136	24.6	40	7.2	2	14.7	2	14.7	33	6.0	5	0.9
DOUGLAS	52	13.9	34	9.1	1	19.2	-	0.0	37	9.9	3	0.8
EDMUNDS	53	12.2	61	14.0	-	0.0	-	0.0	34	7.8	8	1.8
FALL RIVER	83	11.3	112	15.2	1	12.0	-	0.0	113	15.4	30	4.1
FAULK	28	10.2	25	9.1	-	0.0	-	0.0	14	5.1	8	2.9
GRANT	122	14.6	95	11.3	1	8.2	1	8.2	122	14.6	18	2.2
GREGORY	69	12.9	76	14.2	1	14.5	4	58.0	47	8.8	9	1.7
HAAKON	22	8.4	17	6.5	-	0.0	-	0.0	18	6.9	8	3.0
HAMLIN	75	15.1	75	15.1	-	0.0	-	0.0	32	6.4	7	1.4
HAND	47	11.0	43	10.1	-	0.0	-	0.0	24	5.6	9	2.1
HANSON	49	16.4	21	7.0	2	40.8	1	20.4	13	4.3	2	0.7
HARDING	27	16.2	7	4.2	-	0.0	-	0.0	10	6.0	5	3.0
HUGHES	241	16.3	84	5.7	-	0.0	5	20.7	168	11.3	71	4.8
HUTCHINSON	91	11.0	122	14.8	1	11.0	1	11.0	55	6.7	12	1.5
HYDE	25	14.7	18	10.6	-	0.0	-	0.0	14	8.3	-	0.0
JACKSON	50	17.8	30	10.7	-	0.0	-	0.0	15	5.3	3	1.1
JERAULD	30	12.4	32	13.2	1	33.3	-	0.0	17	7.0	2	0.8
JONES	18	13.6	15	11.3	-	0.0	-	0.0	7	5.3	4	3.0
KINGSBURY	75	12.7	79	13.3	-	0.0	-	0.0	47	7.9	5	0.8
LAKE	128	12.1	102	9.7	4	31.3	2	15.6	77	7.3	35	3.3
LAURENCE	280	13.6	191	9.2	3	10.7	5	17.9	362	17.5	118	5.7
LINCOLN	212	13.7	115	7.5	-	0.0	-	0.0	104	6.7	39	2.5
LYMAN	78	21.4	41	11.3	-	0.0	-	0.0	11	3.0	1	0.3
MCCOOK	82	16.9	79	16.3	-	0.0	-	0.0	52	10.7	7	1.4
MCPHERSON	39	6.9	49	8.6	-	0.0	-	0.0	17	3.0	5	0.9
MARSHALL	52	16.1	64	19.8	-	0.0	-	0.0	47	14.6	11	3.4
MEADE	348	15.9	128	5.9	3	8.6	3	8.6	298	13.6	106	4.8
MELLETTE	44	20.6	27	12.6	2	45.5	-	0.0	36	16.8	13	6.1
MINER	40	12.2	43	13.1	-	0.0	-	0.0	24	7.3	6	1.8
MINNEHAHA	2,099	17.0	828	6.7	25	11.9	8	3.8	1,408	11.4	626	5.1
MOODY	95	14.6	55	8.5	-	0.0	-	0.0	38	5.8	13	2.0
PENNINGTON	1,695	20.8	520	6.4	14	8.3	10	5.9	1,226	15.1	447	5.5
PERKINS	44	11.2	54	13.7	2	45.5	-	0.0	36	9.2	12	3.1
POTTER	40	12.5	38	11.9	-	0.0	-	0.0	32	10.0	10	3.1
ROBERTS	161	16.2	133	13.4	1	6.2	-	0.0	221	22.3	19	1.9
SANBORN	36	12.7	39	13.8	-	0.0	-	0.0	10	3.5	5	1.8
SHANNON	326	32.9	99	10.0	10	30.7	1	3.1	5	0.5	1	0.1
SPINK	103	12.9	106	13.3	3	29.1	-	0.0	62	7.8	20	2.5
STANLEY	37	15.1	22	9.0	1	27.0	-	0.0	20	8.2	19	7.7
SULLY	17	10.7	8	5.0	-	0.0	-	0.0	7	4.4	5	3.1
TODD	281	33.6	85	10.2	2	7.1	3	10.7	22	2.6	3	0.4
TRIPP	101	14.6	61	8.8	1	9.9	-	0.0	86	12.4	7	1.0
TURNER	89	10.4	117	13.6	1	11.2	2	22.5	69	8.0	20	2.3
UNION	136	13.4	110	10.8	2	14.7	3	22.1	376	36.9	39	3.8
WALWORTH	69	11.3	84	13.8	-	0.0	-	0.0	47	7.7	21	3.4
YANKTON	292	15.2	181	9.4	1	3.4	1	3.4	250	13.0	65	3.4
ZIEBACH	44	19.8	20	9.0	3	68.2	-	0.0	10	4.5	2	0.9

NOTE: Births, deaths, infant deaths, and fetal deaths are by county of residence, marriages and divorces are by county of occurrence. Birth, death, marriage, and divorce rates per 1,000 population. Infant and fetal death rates per 1,000 live births.

Source: Center for Health Policy and Statistics, South Dakota Department of Health